CHAPTER 7.0 LIST OF MITIGATION MEASURES AND ENVIRONMENTAL DESIGN CONSIDERATIONS

Section 21081.6 of the Public Resources Code requires that public agencies adopt a reporting or monitoring program for the changes made to the Project or conditions of Project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during Project implementation.

Per the requirements of the *Environmental Impact Report Format and General Content Requirements* (County of San Diego, 2006), the list must include: "1) a comprehensive listing of all mitigation measures proposed for the Project; and 2) a listing of all design considerations that were relied upon to reduce impacts (e.g., applicant proposed open space areas, road improvements, drainage systems)." The following is a list of the proposed mitigation measures to be included as part of the mitigation and monitoring program for the proposed Project:

7.1 Mitigation Measures Proposed for the Project

7.1.1 Air Quality

A. Mitigation Measures from the EOMSP Final EIR

Mitigation measures were identified by the EOMSP Final EIR (1994) to address impacts to air quality resulting from construction and long-term operation of the uses identified by the EOMSP, and included the following:

9A. The County shall require applicants to use several techniques to reduce potentially significant construction emissions.

9B. Development projects shall provide bicycle facilities to promote use of alternative transportation methods.

9C. The County shall coordinate with appropriate agencies to implement reduction of vehicle emissions.

B. Project-Specific Mitigation for Impacts to Air Quality

M-AQ-1 **Construction Impacts**

Intent: In order to lower construction emissions of PM_{10} and $PM_{2.5}$ to below the County's established Screening Level Thresholds (SLTs) for construction activities, grading monitoring and emission reduction activities shall occur. **Description of Requirement:** Grading Plans shall be prepared, which clearly describe the grading monitoring and emission reduction activities that shall be undertaken during earthmoving activities to implement Section 87.428 "Dust Control Measures" of the County's Grading Ordinance. The Grading Plans shall include the following:

- The Permit Compliance Engineer (as defined in Section 87.420 of the County Grading Ordinance) shall provide documentation/evidence of compliance with each note in the regular reports required pursuant to Section 87.420(a) of the County's Grading Ordinance.

- "During grading and ground-disturbing construction activities, the Permit Compliance Engineer shall assure that water trucks or sprinkler systems apply water to areas undergoing active ground disturbance a minimum of three (3) times daily (3.2 hour watering interval) to ensure a minimum soil moisture of 12%. All areas of disturbed soils shall be kept damp enough to prevent airborne dust from dispersing beyond the boundaries of the site. The Permit Compliance Engineer shall order increased watering frequency when airborne dust is visible. A log of all site watering activities shall be maintained by the Permit Compliance Engineer, and this log shall be made available to the County upon request."

  Reporting: the Permit Compliance Engineer shall maintain a log of daily site watering activities, and shall be provided to the County upon request. The site watering log also shall be provided in the regular reports required pursuant to Section 87.420(a) of the County's Grading Ordinance.

- "The Permit Compliance Engineer shall assure that temporary signs indicating a maximum 15 MPH speed limit are placed along all unpaved roads and/or unpaved haul routes on the Project site, before construction activities commence. Signs shall be spaced no more than 1,000 lineal feet apart. The Permit Compliance Engineer also shall be responsible for assuring radar enforcement of the 15 MPH speed limit throughout the duration of construction activities."

  Reporting: The Permit Compliance Engineer shall provide evidence of sign installation by including photographs of the installed signs and a scaled diagram or copy of the grading plan, identifying the location of each sign, in the regular reports required pursuant to Section 87.420(a) of the County's Grading Ordinance.

- "The Permit Compliance Engineer shall assure that temporary signs indicating that all construction equipment on-site shall not idle for more than five (5) minutes are placed at all loading, unloading, and equipment staging areas, before construction activities commence. The Permit Compliance Engineer also shall be responsible for assuring enforcement of the five (5) minute idling limit throughout the duration of construction activities."

  Reporting: The Permit Compliance Engineer shall provide evidence of sign installation by including photographs of the installed signs and a scaled diagram or copy of the grading plan, identifying the location of each sign, in the regular reports required pursuant to Section 87.420(a) of the County's Grading Ordinance.

- "A gravel apron measuring at least 25 feet long by road width shall be provided at all unpaved entrances into the construction site and shall be maintained until the entrance is removed, paved, or no longer in use by construction vehicles and equipment."

  Reporting: The Permit Compliance Engineer shall include photographs of all constructed gravel aprons in the regular reports required pursuant to Section 87.420(a) of the County's Grading Ordinance.

- "The Permit Compliance Engineer shall ensure that all grading, earthmoving, and ground-disturbing construction activities are temporarily halted when sustained wind speeds exceed 25 MPH."

  Reporting: The Permit Compliance Engineer shall maintain a log of all work days and time durations when grading, earthmoving, and ground-disturbing construction activities were temporarily halted due to sustained wind speeds exceeding 25 MPH. The log shall be provided in the regular reports required pursuant to Section 87.420(a) of the County's Grading Ordinance.

- "The Permit Compliance Engineer shall ensure that street sweeping of adjacent public roads occurs at the end of each work day that visible soil material is carried onto paved roads and at least once every two weeks. A log of all street sweeping activities shall be maintained by the Permit Compliance Engineer and shall be made available to the County upon request"

  Reporting: The Permit Compliance Engineer shall maintain a log of all street sweeping activities, and shall be provided to the County upon request. The log also shall be provided in the regular reports required pursuant to Section 87.420(a) of the County's Grading Ordinance.

- "The Permit Compliance Engineer shall assure that chemical dust suppressants are applied at least once per year to all designated unpaved parking areas used by construction workers and/or construction equipment."

  Reporting: The regular reports required pursuant to Section 87.420(a) of the County's Grading Ordinance shall include a map depicting the locations of all designated construction parking areas, a description of the chemical suppressants utilized, and the date(s) of application.

- "The Permit Compliance Engineer shall ensure that rough grading activities do not overlap with other phases of construction (*i.e.*, paving, underground, building, and architectural coatings). A schedule of such activities shall be maintained by the Permit Compliance Engineer, and shall be made available to the County upon request."

  Reporting: A copy of the construction schedule shall be included in the regular reports required pursuant to Section 87.420(a) of the County's Grading Ordinance. Construction schedules also shall be provided to the County for review upon request.

Documentation: The applicant shall prepare the Grading Plan pursuant to this mitigation measure and then shall submit it to the Department of Public Works, along with payment of all applicable review fees and deposits. In addition, the Permit Compliance Engineer shall provide the Department of Public Works with evidence of compliance with this mitigation measure in the regular reports required pursuant to Section 87.420(a) of the County's Grading Ordinance, and shall make such evidence available when requested by the County. **Timing:** Prior to the approval of each grading permit. **Monitoring:** The Department of Public Works shall review the Grading Plan for

conformance with this mitigation measure. Upon approval of each Grading Plan, a decision of approval and a grading permit shall be issued to the applicant.

M-AQ-2 Mitigation Measures M-GG-1a and M-GG-1b shall apply.

M-AQ-3a **Sensitive Receptors Impacts - Residences**
Intent: In order to mitigate long-term operational impacts to off-site sensitive receptors due to diesel exhaust emissions, the Project shall incorporate design measures to reduce the incremental carcinogenic risk associated with Project implementation. **Description of Requirement:** For buildings with truck yards or loading docks, the County DPLU shall ensure that the Site Plans require the placement of signs at all truck parking and loading bay areas to identify applicable California Air Resources Board (CARB) anti-idling regulations. Each sign shall include the text "*Extended Idling of Truck Engines is not Permitted*," and give directions to truck parking spaces with electrical hookups. **Documentation:** The applicant shall prepare the Site Plan(s) pursuant to this mitigation measure and in accordance with DPLU Form #506, *Applicant's Guide to Site Plan*. The applicant shall submit the Site Plans to the Department of Planning and Land Use, along with all applicable review fees and deposits. **Timing:** Pursuant to Section 3.3.1 of the EOMSP, review for compliance with this mitigation measure shall occur prior to approval of future Site Plans for the site. Evidence of sign installation shall occur prior to issuance of a certificate of occupancy. . **Monitoring:** The Department of Planning and Land Use shall review the Site Plans for conformance with this mitigation measure. In addition, evidence of sign installation shall be provided to the County DPLU prior to the issuance of a certificate of occupancy.

M-AQ-3b **Sensitive Receptors Impacts - Residences**
Intent: In order to mitigate long-term operational impacts to off-site sensitive receptors due to diesel exhaust emissions, the Project shall incorporate design measures to reduce the incremental carcinogenic risk associated with Project implementation. **Description of Requirement:** For buildings with truck yards and/or loading docks, the County DPLU shall review the parking lot striping and security gating plan to ensure that the site design allows for adequate truck stacking at gates and allows for trucks to park overnight on the site to prevent queuing of trucks outside the facility. **Documentation:** The applicant shall prepare the Site Plan(s) pursuant to this mitigation measure and in accordance with DPLU Form #506, *Applicant's Guide to Site Plan*. The applicant shall submit the Site Plans to the Department of Planning and Land Use, along with all applicable review fees and deposits. **Timing:** Pursuant to Section 3.3.1 of the EOMSP, review for compliance with this mitigation measure shall occur prior to approval of future Site Plans for the site. . **Monitoring:** The Department of Planning and Land Use shall review the Site Plans for conformance with this mitigation measure.

M-AQ-3c **Sensitive Receptors Impacts - Residences**
Intent: In order to mitigate long-term operational impacts to off-site sensitive receptors due to diesel exhaust emissions, the Project shall incorporate design measures to reduce the incremental carcinogenic risk associated with Project implementation. **Description of Requirement:** Any buildings that would receive shipping container refrigerator units (RUs) shall provide electrical hookups at all loading dock door positions. The locations of the electrical hookups shall be indicated on construction drawings and building plans and shall be subject to approval by the County DPLU. **Documentation:** The applicant

shall prepare the Site Plan(s) pursuant to this mitigation measure and in accordance with DPLU Form #506, *Applicant's Guide to Site Plan.* The applicant shall submit the Site Plans to the Department of Planning and Land Use, along with all applicable review fees and deposits. **Timing:** Pursuant to Section 3.3.1 of the EOMSP, review for compliance with this mitigation measure shall occur prior to approval of future Site Plans for the site. Evidence of installed electrical hookups shall occur prior to issuance of a certificate of occupancy. **Monitoring:** The Department of Planning and Land Use shall review the Site Plans for conformance with this mitigation measure. In addition, evidence of installed electrical hookups shall be provided to the County DPLU prior to the issuance of a certificate of occupancy.

M-AQ-4 Mitigation Measures M-AQ-3a through M-AQ-3c shall apply.

M-AQ-5 Mitigation Measure M-AQ-1 shall apply.

M-AQ-6 Mitigation Measures M-GG-1a and M-GG-1b shall apply.

7.1.2 Biological Resources

A. Mitigation Measures from the EOMSP Final EIR

Mitigation measures were identified by the EOMSP Final EIR (1994) to address impacts to biological resources resulting from long-term development of the EOMSP area. These mitigation measures included, in part, the following:

- *Preserve 100% of the J-22 complex (including watershed; provide buffers. Preserve 100% of occupied vernal pools, if possible.*
- *Participation in NCCP [sic] involving on-site preservation of large portions of coastal sage scrub habitat.*
- *Incorporate 90% of Stipa on-site into designated open space and maintain a corridor between preserved grassland habitat and the foothills to the east. Retain some non-native grassland along the US-Mexico border as foraging habitat, if possible.*
- *Preserve drainages and incorporate buffers for 13 acres of wetlands.*

B. Project-Specific Mitigation for Impacts to Biological Resources

M-BI-1: **SMALL FLOWERED MORNING GLORY MITIGATION: [DPW] [Grading Permits, Final Grading Inspection]**

Intent: In order to mitigate for Project impacts 631 individuals of small-flowered morning glory, off-site habitat-based mitigation shall be provided. **Description of Requirement:** The Project applicant shall preserve off-site grassland habitat suitable for supporting small-flowered morning glory. The preserved habitat will be part of the area to be preserved as mitigation for impacts to non-native grassland and raptor foraging habitat (refer to Mitigation Measure M-BI-12). **Documentation:** The applicant shall provide the DPLU with evidence that the required off-site grassland habitat has been preserved. **Timing:** Prior to issuance of grading permits, the applicant shall provide the DPLU with evidence that the required grassland habitat has been preserved. **Monitoring:** The DPLU shall review the evidence provided by the applicant to ensure that the required conservation of habitat has been completed prior to final grading inspection.

M-BI-2a: **ROAD POOL MITIGATION: [DPW] [Grading Permit]**

Intent: In order to mitigate for impacts to 0.06-acre of road pools containing San Diego fairy shrimp or Riverside fairy shrimp, which are sensitive resources pursuant to the Biological Mitigation Ordinance (BMO), vernal pool restoration and creation shall occur. **Description of Requirement:** Prior to the issuance of grading or clearing permits, impacts to 0.06-acre of road pools supporting San Diego or Riverside fairy shrimp shall be mitigated at a ratio of 5:1 for a total of 0.30-acre of vernal pools. Mitigation shall occur at Lonestar Ridge. It should be noted that all of the Project's 0.06-acre impact to road pools would overlap with impacts proposed as part of the Otay Business Park Project (TM5505). If the Otay Business Park project is not implemented before the proposed Project, the Project applicant shall mitigate on-site impacts to road pools according to the Vernal Pool Preserve Restoration Plan for the Otay Business Park project (provided as Appendix H to the biological impact analysis, which is included as Appendix C to this SEIR) and the conditions set forth by the Wildlife Agencies in the Biological Opinion for the Otay Business Park Project. The required restoration for the proposed Project shall be limited only to that required to mitigate impacts to the fairy shrimp/pool impacts of TM 5566 (i.e., 0.30-acre of restoration/creation), and shall not include other mitigation requirements identified in the plan for Otay Business Park (i.e., grassland dethatching, mowing, artificial owl burrows, QCB locations, etc.). If the Otay Business Park project is implemented first, then the applicant shall provide evidence that the required restoration/creation efforts have occurred in conformance with the Vernal Pool Preserve Restoration Plan for the Otay Business Park project. **Documentation:** The applicant shall provide the DPLU with evidence that 0.18-acre of vernal pools have been created/restored within the Lonestar Parcels in accordance with the Vernal Pool Preserve Restoration Plan and Biological Opinion for the Otay Business Park project. The applicant shall also demonstrate that take authorization from the Wildlife Agencies has been issued for Project-related impacts. **Timing:** Prior to the issuance of grading permits, the applicant shall provide the DPLU evidence that adequate mitigation for impacts to road pools has occurred. **Monitoring:** The DPLU shall review the evidence provided by the applicant to ensure that the habitat preservation efforts have been completed prior to final grading inspection.

M-BI-2b: **VERNAL POOL PROPAGATION: [DPW] [Grading Permit]**

Intent: In order to mitigate for impacts to 0.06-acre of road pools containing San Diego fairy shrimp or Riverside fairy shrimp, which are sensitive resources pursuant to the Biological Mitigation Ordinance (BMO), the created/restored vernal pool habitat required pursuant to Mitigation Measure M-BI-1a shall be propagated with soil containing San Diego and Riverside fairy shrimp cysts. **Description of Requirement:** As a component of vernal pool restoration and creation activities required pursuant to Mitigation Measure M-BI-1a, soil from the impacted road pools on-site shall be salvaged and translocated to the Lonestar Parcels. The salvaged soil shall be used to inoculate the created/restored vernal pools at the Lonestar Parcels (totaling a minimum of 0.30-acre). It should be noted that all of the Project's 0.06-acre impact to road pools would overlap with impacts proposed as part of the Otay Business Park Project (TM5505). If the Otay Business Park project is not implemented before the proposed Project, the Project applicant shall salvage soil from the on-site road pools, translocate the soil, and inoculate created/restored vernal pools on the Lonestar Parcels according to the Vernal Pool Restoration Plan for the Otay Business Park project and the conditions set forth by the

Wildlife Agencies in the Biological Opinion for the Otay Business Park Project. The required restoration for the proposed Project shall be limited only to that required to mitigate impacts to the fairy shrimp/pool impacts of TM 5566 (i.e., 0.30-acre of restoration/creation), and shall not include other mitigation requirements identified in the plan for Otay Business Park (i.e., grassland dethatching, mowing, artificial owl burrows, QCB locations, etc.). If the Otay Business Park project is implemented first, then the applicant shall provide evidence that the required restoration/creation efforts have occurred in conformance with the Vernal Pool Preserve Restoration Plan for the Otay Business Park project. **Documentation:** The applicant shall provide the DPLU with evidence that soil salvage, translocation and inoculation activities have occurred within the Lonestar Parcels in accordance with the Vernal Pool Preserve Restoration Plan and Biological Opinion for the Otay Business Park project. **Timing:** Prior to the issuance of grading permits, the applicant shall provide the DPLU evidence that adequate mitigation for impacts to road pools has occurred. **Monitoring:** The DPLU shall review the evidence provided by the applicant to ensure that the habitat preservation efforts have been completed prior to final grading inspection.

M-BI-3: Mitigation Measures M-BI-2a and M-BI-2b shall apply.

M-BI-4a: **BRUSHING, GRADING, AND CLEARING RESTRICTIONS: [DPW] [Grading Permit]**

Intent: In order to mitigate for potential impacts to breeding or nesting birds and/or burrowing owls that could occur during brushing, grading, and clearing activities. **Description of Requirement:** All brushing, grading, and clearing of vegetation shall occur outside of the breeding season for the burrowing owl and migratory birds (February 1 through August 31). **Timing:** Restrictions on the timing of brushing, grading, and clearing activities shall be listed on the Grading Permit prior to its approval. **Documentation:** The DPW shall ensure that the grading permit includes a note prohibiting construction activities during the breeding season for the burrowing owl and migratory birds. **Monitoring:** The DPW shall ensure that a note prohibiting brushing, grading, or clearing activities during the breeding season for the burrowing owl and migratory birds.

M-BI-4b: **BRUSHING, GRADING, AND CLEARING RESTRICTIONS: [DPW] [Grading Permit]**

Intent: In order to mitigate for potential impacts to the burrowing owl that could occur during brushing, grading, and clearing activities. **Description of Requirement:** Outside of the burrowing owl breeding season (February 1 through August 31), a pre-construction survey shall be conducted to identify the known active burrows. Weed removal (by whacking, bush hogging, or mowing) shall be conducted as part of the pre-construction survey, under the guidance of a qualified biological monitor, to make all potential burrows more visible and to avoid injuring owls by burrow collapse. As a component of this survey, cameras shall be used to verify whether burrows are occupied by burrowing owls. If owls are present in the burrows, a qualified biologist shall implement passive relocation measures (installation of one-way doors) in accordance with CDFG regulations (CDFG 1995). Any eviction or passive relocation methods must be specifically approved by the Wildlife Agencies, and shall occur outside of the burrowing owl breeding season. Once all owls have vacated the burrows (approximately 48 hours), a qualified biologist shall oversee the excavation and filling of the burrows. In order to assure that burrowing

owl burrows do not become reoccupied, construction equipment and materials (e.g., pipes, rubble piles, etc.) shall be closed off to prevent burrowing owls from reoccupying the site. **Timing:** A pre-construction survey shall occur no more than 7 days prior to commencement of brushing, grading, or clearing activities to determine the presence or absence of burrowing owls. **Documentation:** The applicant shall prepare a pre-construction survey of areas proposed for clearing, brushing, or grading no more than 7 days prior to the commencement of such activities. If owls are determined to be present within the burrows, the applicant shall document passive relocation measures undertaken to preclude direct impacts to burrowing owl individuals, and the Project biologist shall certify that all owls have vacated any occupied burrows. **Monitoring:** The DPW shall ensure that a note requiring pre-construction surveys prior to brushing, grading, and clearing activities is included on the grading permit. The DPLU shall review the pre-construction survey results, along with evidence of any passive relocation measures, to ensure compliance with these requirements.

M-BI-4c: Mitigation Measure M-BI-12 shall apply.

M-BI-5: Mitigation Measures M-BI-4a and M-BI-12 shall apply.

M-BI-6: Mitigation Measure M-BI-12 shall apply.

M-BI-7: Mitigation Measures M-BI-4a and M-BI-12 shall apply.

M-BI-8: Mitigation Measures M-BI-4a and M-BI-12 shall apply.

M-BI-9 Mitigation Measure M-BI-12 shall apply.

M-BI-10a: **FUGITIVE DUST: [DPW] [Grading Permit]**
Intent: In order to mitigate for indirect impacts to local wildlife due to fugitive dust, watering of unpaved surfaces shall occur during grading activities. **Description of Requirement:** Potential indirect impacts to local wildlife caused by fugitive dust shall be mitigated by requiring that active construction areas and unpaved surfaces be watered per County standards to reduce potential indirect impacts caused by fugitive dust. **Documentation:** Ensure that a note is included on Project grading plans indicating a requirement to water unpaved surfaces in accordance with County standards. **Timing:** Prior to approval of grading or clearing permits, the note shall be included on the Grading Plans. **Monitoring:** The Permit Compliance Engineer (as defined in Section 87.420 of the County Grading Ordinance) shall provide documentation/evidence of compliance with each note in the regular reports required pursuant to Section 87.420(a) of the County's Grading Ordinance.

M-BI-10b: **ERRANT CONSTRUCTION IMPACTS: [DPLU] [Grading Permit]**
Intent: In order to prevent errant grading or clearing beyond the proposed construction limits that could impact sensitive vegetation communities or species intended for preservation. **Description of Requirement:** Orange construction fencing shall be installed around the approved limits of impacts to define the grading boundaries and prevent unintended impacts. **Documentation:** Grading plans shall include a note documenting this requirement. **Timing:** Prior to approval of grading or clearing permits, the note shall be included on the Grading Plans. **Monitoring:** The Permit Compliance

Engineer (as defined in Section 87.420 of the County Grading Ordinance) shall provide documentation/evidence of compliance with each note in the regular reports required pursuant to Section 87.420(a) of the County's Grading Ordinance.

M-BI-10c: **INVASIVE PLANT SPECIES: [DPLU] [Grading Permit, Site Plan]**

Intent: In order to prevent intrusion of invasive plant species into adjacent open space areas on- and off-site, final landscaping plans shall exclude any invasive plant species. **Description of Requirement:** The Department of Planning and Land Use shall review final landscaping plans for the site to ensure that the proposed landscaping elements are consistent with the landscaping requirements specified on the approved Conceptual Landscape Plan and to verify that landscaping elements adhere to the requirements of the MSCP Adjacency Guidelines and do not include any of the invasive plant species included on the Cal-IPC List A. **Documentation:** The applicant shall prepare final landscaping plans in conjunction with grading permits and future site plans in a manner consistent with the approved Conceptual Landscape Plan. The Final Landscape Plans shall demonstrate that no prohibited plant species are proposed on- or off-site. **Timing:** Prior to the issuance of grading permits and future site plans, a landscaping plan that does not include invasive plant species shall be approved by the Planning and Building Department. **Monitoring:** The [*DPLU, LA*] shall review proposed final landscaping plans to ensure conformance with the MSCP Adjacency Guidelines and to verify that no invasive plant species included on the Cal-IPC List A are proposed.

M-BI-10d: **CONSTRUCTION RESTRICTIONS: [DPW] [Improvement Plans and Building Permits]**

Intent: In order to mitigate for potential indirect impacts to breeding or nesting birds (including raptors) that could be impacted by construction activities. **Description of Requirement:** Construction noise may not exceed 60 dB L_{eq} at any raptor or burrowing owl nest site. A pre-construction survey shall be conducted by a County-approved biologist to determine whether construction activities are located within 300 feet of ground dwelling raptor nests. Construction activities may not proceed within 300 feet of active ground dwelling raptor nests. This limitation may only be waived by the Director of DPLU if a noise report by a County-approved noise consultant certifies that noise levels would not exceed 60 dB L_{eq} at the nest site. If the noise report determines that noise mitigation measures such as noise barriers are necessary to bring noise levels to below 60 dB L_{eq} at the nest site(s), they shall be installed prior to starting construction. **Timing:** These restrictions shall be documented on all Project improvement plans and building permits. Pre-construction surveys shall occur no more than 7 days prior to construction activities. If noise barriers or other noise mitigation measures are required, such measures shall be installed prior to commencement of any construction activities which occur within 300 feet of ground dwelling raptor nests. **Documentation:** The DPW shall ensure that improvement plans and building permits include a note documenting these requirements. The applicant shall prepare a pre-construction survey no more than 7 days prior to the commencement of construction activities to determine whether construction activities are proposed within 300 feet of ground dwelling raptor nests. If construction activities are proposed within 300 feet of ground dwelling raptor nests, the applicant shall provide a noise report prepared by a County-approved noise consultant specifying what mitigation measures, if any, are required to bring the noise level at the nest site(s) below 60 dB $L_{eq.}$ If noise mitigation measures are required, the applicant shall provide evidence (e.g., photos) that demonstrates that the measures have

been undertaken in accordance with the noise report. **Monitoring:** The DPW shall review improvement plans and building permits to ensure that the required notes have been included on the plans. The DPLU shall review the pre-construction survey, noise report, and evidence that noise minimization measures have been undertaken to ensure that the requirements specified by this measure have been adhered to.

M-BI-11: **SOUTHERN WILLOW SCRUB MITIGATION: [DPW] [Grading Permits, Final Grading Inspection]**

Intent: In order to mitigate for Project impacts to 0.08-acre of southern willow scrub habitat on-site, habitat credits shall be purchased from an off-site mitigation bank. **Description of Requirement:** The Project applicant shall purchase habitat credits for 0.08-acre of southern willow scrub habitat from the Rancho Jamul Mitigation Bank. **Documentation:** The applicant shall provide the DPLU with evidence that habitat credits for 0.08-acre of southern willow scrub habitat have been purchased from the Rancho Jamul Mitigation Bank. **Timing:** Prior to issuance of grading permits, the applicant shall provide the DPLU with evidence that adequate habitat credits have been purchased. **Monitoring:** The DPLU shall review the evidence provided by the applicant to ensure that the habitat preservation efforts have been completed prior to final grading inspection.

M-BI-12: **NON-NATIVE GRASSLAND MITIGATION: [DPW] [Grading Permits, Final Grading Inspection]**

Intent: In order to mitigate for Project impacts to 83.1 acres of non-native grassland habitat on-site and within the off-site improvement area, off-site preservation shall be required. **Description of Requirement:** Impacts to 83.1 acres of non-native grassland shall be mitigated through the preservation of non-native grassland off-site at a ratio of 1:1, for a total of 83.1 acres. Off-site preservation may occur through a combination of on- and off-mesa preservation. A Resource Management Plan shall be prepared and submitted for County and Wildlife Agency review once the location of the required mitigation is identified. Additionally, required mitigation shall comply with the County's burrowing owl strategy (County 2010). It should be noted that a portion of the Project's impacts to non-native grassland (17.2 acres) would overlap with impacts proposed as part of the Otay Business Park Project (TM5505). Should the Otay Business Park project implement required mitigation for the 17.2 acres of non-native grassland, the Project's total required mitigation acreage shall be reduced accordingly. The remaining 65.9 acres would be mitigated pursuant to the County's burrowing owl strategy. A Resource Management Plan (RMP) for mitigation occurring at Lonestar Ridge has been prepared as part of the Otay Business Park project (refer to Appendix I to the biological technical report, included as Appendix C to this SEIR) and is anticipated to be carried out by the Otay Business Park project. If the proposed Project is implemented prior to Otay Business Park and uses a portion of Lonestar Ridge for part of its non-native grassland mitigation requirements, then the mitigation shall occur in conformance with applicable portions of the Lonestar Ridge RMP prepared for Otay Business Park. Other management requirements in the Otay Business Park RMP not directly associated with the preservation of 17.2 acres of non-native grassland would not be required in association with the proposed Project. **Documentation:** The applicant shall provide the DPLU with evidence that preservation of 83.1 acres of non-native grassland habitat has occurred either on- or off-mesa and in conformance with the County's burrowing owl strategy. **Timing:** Prior to issuance of grading permits, the applicant shall provide the DPLU with

evidence that adequate preservation has occurred. **Monitoring:** The DPLU shall review the evidence provided by the applicant to ensure that the habitat preservation efforts have been completed prior to final grading inspection.

M-BI-13: Mitigation Measures M-BI-2a and M-BI-2b shall apply.

M-BI-14: Mitigation Measure M-BI-4a shall apply.

M-BI-15: Mitigation Measures M-BI-2a and M-BI-2b shall apply.

M-BI-16: Mitigation Measures M-BI-2a and M-BI-2b shall apply.

M-BI-17: Mitigation Measures M-BI-4a, M-BI-4b, and M-BI-12 shall apply.

M-BI-18: Mitigation Measures M-BI-4a and M-BI-12 shall apply.

M-BI-19: Mitigation Measure M-BI-12 shall apply.

M-BI-20: Mitigation Measure M-BI-12 shall apply.

M-BI-21: Mitigation Measures M-BI-4a and M-BI-12 shall apply.

M-BI-22: Mitigation Measure M-BI-12 shall apply.

M-BI-23: Mitigation Measure M-BI-12 shall apply.

M-BI-24: Mitigation Measure M-BI-12 shall apply.

M-BI-25: Mitigation Measure M-BI-12 shall apply.

M-BI-26: Mitigation Measure M-BI-1 shall apply.

M-BI-27: Mitigation Measure M-BI-12 shall apply.

M-BI-28: Mitigation Measures M-BI-2a and M-BI-2b shall apply.

M-BI-29: Mitigation Measure M-BI-4a shall apply.

7.1.3 Mitigation for Impacts to Cultural Resources

A. Mitigation Measures from the EOMSP Final EIR

4A. Testing of all untested or unevaluated sites will be conducted prior to approval of any subsequent discretionary permits. Sites determined to be important after testing will be preserved in open space easements or will be subject to additional testing, or both. Impacts to sites determined not to be important will be considered bo be adequately mitigated after the testing phase.

4B. Prior to approval of any discretionary permits in the 400 acre area not yet surveyed due to agricultural constraints, a cultural resource survey shall be conducted by a

qualified archaeologist in accordance with the County of San Diego Archaeological/Historical Report Procedures.

4C. For sites determined to be important after testing, alternate jeans of achieving mitigation shall be pursued. These include, but are not limited to, the following:

1. Site avoidance by preservation through capping the site with a layer of sterile fill and placing landscaping on top.
2. Dedication of open space easements to protect the resources.
3. Additional data recovery by implementation of an excavation and analysis program.
4. A combination of one or more of the above measures or additional measures, as appropriate.

4D. Any additional survey, testing, or excavation and analysis must be conducted by a qualified archeologist, in accordance with the San Diego County Archaeological/ Historical Report Procedures. Work to be conducted will include the field work, literature review, analysis of artifacts, preparation of a research design prior to commencement of field work, and the preparation of a report describing the results, with recommendations for mitigation of impacts.

4E. All cultural resource work shall be conducted in accordance with the East Otay Mesa Cultural Resource Management Plan, prepared by Ogden Environmental and Gallegos Associates, dated October 1993.

4F. Site preservation shall be the preferred mitigation strategy for cultural resources.

B. Project-Specific Mitigation for Cultural Resources Impacts

M-CR-1a **ARCHAEOLOGICAL GRADING MONITORING: *[DPLU, PCC] [DPW, ESU] [MA, GP, IP]* [DPLU, FEE X 2]**

Intent: In order to mitigate for potential direct impacts to undiscovered buried prehistoric and historic archaeological resources on the project site, a grading monitoring program and potential data recovery program shall be implemented pursuant to the County of San Diego Guidelines for Determining Significance for Cultural Resources and CEQA Section 15064.5 an 15064.7. **Description of Requirement**: A County approved Principal Investigator (PI) known as the "Project Archaeologist," shall be contracted to perform cultural resource grading monitoring and a potential data recovery program during all grading, clearing, grubbing, trenching, and construction activities. The following shall be completed:

a. The Project Archaeologist shall perform the monitoring duties before, during and after construction pursuant to the most current version of the County of San Diego Guidelines for Determining Significance and Report Format and Requirements for Cultural Resources, and this map. The contract provided to the County shall include an agreement that the grading monitoring will be completed, and a Memorandum of Understanding (MOU) between the Project Archaeologist and the County of San Diego shall be executed. The contract shall include a cost estimate for the monitoring work and reporting.

b. The Project Archeologist shall provide evidence that a Qualified Native American of the appropriate tribal affiliation has also been contracted to perform Native American Grading Monitoring for the project.

c. The cost of the monitoring shall be added to the grading bonds that will be posted with the Department of Public Works, or bond separately with the Department of Planning and Land Use.

Documentation: The applicant shall provide a copy of the Grading Monitoring Contract, cost estimate, and MOU to the *[DPLU, PCC]*. Additionally, the cost amount of the monitoring work shall be added to the grading bond cost estimate. **Timing**: Prior to the approval of the map for 3100 5566 (TM) and prior to the approval of any plan and issuance of any permit, the contract shall be provided. **Monitoring**: The *[DPLU, PCC]* shall review the contract, MOU and cost estimate or separate bonds for compliance with this condition. The cost estimate should be forwarded to *[DPW, LDR]*, for inclusion in the grading bond cost estimate, and grading bonds. The *[DPW, PC]* shall add the cost of the monitoring to the grading bond costs, and the grading monitoring requirement shall be made a condition of the issuance of the grading or construction permit.

M-CR-1b **CULTURAL RESOURCES REPORT: [DPLU, PCC] [UO, FG] [DPLU, FEE X2].** **Intent**: In order to ensure that the Grading Monitoring occurred during the grading phase of the project pursuant to MCR-1a, a final report shall be prepared. **Description of Requirement**: A final Grading Monitoring and Data Recovery Report that documents the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program shall be prepared. The report shall include the following items:

a. Department of Parks and Recreation Primary and Archaeological Site forms.

b. Daily Monitoring Logs.

c. Evidence that all cultural resources collected during the grading monitoring program has been curated at a San Diego facility that meets federal standards per 36 CFR Part 79, and therefore would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records, including title, shall be transferred to an appropriate curation facility in San Diego County, to be accompanied by payment of the fees necessary for permanent curation. Evidence shall be in the form of a letter from the curation facility identifying that archaeological materials have been received and that all fees have been paid.

d. If no cultural resources are discovered, a brief letter to that effect must be submitted stating that the grading monitoring activities have been completed. Daily Monitoring Logs must be submitted with the negative monitoring report.

Documentation: The applicant's archaeologist shall prepare the final report and submit it to the *[DPLU, PCC]* for approval. **Timing**: Prior to any occupancy or final grading release, the final report shall be prepared. **Monitoring**: The *[DPLU, PCC]* shall review the final report for compliance this condition and the report format guidelines. Upon acceptance of the report, *[DPLU, PCC]* shall inform *[DPW, LDR]* and *[DPW, PDCI]*, that the requirement is complete and the bond amount can be relinquished. If the monitoring was bonded separately, then *[DPLU, PCC]* shall inform *[DPLU, FISCAL]* to release the bond back to the applicant.

M-CR-1c **ARTIFACT CURATION: [DPLU, PCC] [MA, GP, IP] [DPLU, FEE]**
Intent: In order to ensure that all cultural resource artifacts that were discovered during the survey, testing and evaluation phase are curated for future research and study, the artifacts shall be curated in a County approved curation facility. **Description of Requirement**: All archaeological materials recovered by Brian F. Smith of Brian F. Smith and Associates during the work reported in: "*A Phase I Archaeological Survey and Phase II Cultural Resources Evaluation for the Hawano Project*," prepared by Brian F. Smith of Brian F. Smith and Associates", dated March 10, 2011, have been curated at a San Diego facility that meets federal standards per 36 CFR Part 79, and therefore would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within San Diego County, to be accompanied by payment of the fees necessary for permanent curation. **Documentation**: The applicant shall provide a letter from the curation facility, which identifies that the archaeological materials referenced in the final report have been received and that all fees have been paid. **Timing**: Prior to the approval of any plan, issuance of any permit, and prior to approval of any map, the artifacts shall be curated. **Monitoring**: The *[DPLU, PCC]* shall review the letter from the curation facility for compliance with this condition.

M-CR-2a **DATA RECOVERY PROGRAM: [DPLU, PCC] [MA, GP, IP] [DPLU, FEE]**
Intent: In order to mitigate for potential impacts to significant cultural resources pursuant to Section 15064.5 of the California Environmental Quality Act (CEQA), which are not determined to be significant pursuant to Section 86.602.o of the Resource Protection Ordinance (RPO), a data recovery program shall be implemented. **Description of Requirement**: Implement the research design detailed in the archaeological extended study "A Phase I Archaeological Survey and Phase II Cultural Resources Evaluation for the Hawano Project" prepared by Brian F. Smith of Brian F. Smith and Associates", dated March 10, 2011. The implementation of the research design constitutes mitigation for the proposed destruction of archaeological Site SDI-8081. The data recovery program shall include the following:

a. **Phase One**: The data recovery program shall comply with research design and performance standards that are in the approved data recovery program in the report referenced above.

b. **Phase One**: Upon completion a letter report shall be prepared, which evaluates the issues of site integrity, data redundancy, spatial and temporal patterning, features, and other relevant topics in order to assess the adequacy of the initial 3 percent sample. Based on this assessment, the letter report shall recommend the need for and scope of a second phase of field investigations, not to exceed a total site hand excavated sample of 5 percent subsurface artifact concentrations. If no artifacts are found, then a phase two data recovery program is not required.

c. **Phase Two**: Implement Phase Two fieldwork as necessary. For artifacts are found during the phase one and phase two data recovery referenced above, conduct an artifact analysis, which includes the following: lithics, ceramics, faunal, floral, assemblage, and radiocarbon dating as referenced in the report above.

d. **Curation**: All archaeological materials recovered during both the survey, significance testing, and data recovery phases, shall be curated at a San Diego facility that meets federal standards per 36 CFR Part 79, and therefore would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within San Diego County, to be accompanied by payment of the fees necessary for permanent curation.

Documentation: Upon completion of the phase one data recovery referenced above, the applicant shall submit the letter report to the *[DPLU, PCC]* for review and approval. If a phase two data recovery program is required, the applicant shall provide a Final Technical Report from the Principal Investigator to the *[DPLU, PCC]*. The final report shall include a letter from the curation facility identifying that archaeological materials have been received and that all fees have been paid. **Timing**: Prior to the approval of any plan, issuance of any permit and prior to approval of any map, the data recovery program shall be completed. **Monitoring**: The *[DPLU, PCC]* shall review the phase one letter from the project archaeologist (PI) for compliance with this condition. If a phase two data recovery program is required, the *[DPLU, PCC]* shall review the final data recovery program report for compliance with this condition.

M-CR-2b Mitigation Measure M-CR-1c shall apply.

M-CR-3 **GRADING MONITORING FOR ACCIDENTAL DISCOVERY OF HUMAN REMAINS [DPW, PDCI] [DPLU, PCC] [DPLU, FEE X2]**

Intent: In order to mitigate for the potential to impact previously undiscovered human remains during Project grading and excavation activities, grading monitoring and agency coordination shall occur. **Description of Requirement**: As outlined in CEQA Guidelines Section 15064.5, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlay adjacent remains until the County coroner has examined the remains. If the Corner determines the remains to be those of an American Indian, or has reason to believe that they are those of an American Indian, the Coroner shall contact, by telephone within 24 hours, the Native American Heritage Commission. The Native American representative and the County of San Diego shall be consulted to determine a preferred course of action, and the burial shall be treated accordingly. **Documentation**: The applicant shall implement the grading monitoring program pursuant to this condition. **Timing**: The following actions shall occur throughout the duration of the grading construction. **Monitoring**: The *[DPW, PDCI]* shall make sure that the Project Archeologist is on-site performing the Monitoring duties of this condition. The *[DPW, PDCI]* shall contact the *[DPLU, PCC]* if the Project Archeologist or applicant fails to comply with this condition.

M-CR-4 Mitigation Measures M-CR-1a, M-CR-1b, M-CR-1c, M-CR-2a, and M-CR-3 shall apply.

7.1.4 Mitigation for Impacts to Geology and Soils

A. Mitigation Measures from the EOMSP Final EIR

5A. Site specific subsurface geotechnical investigations shall be required for each project proposed in the Specific Plan Area. These shall include, but not be limited to the following:

- Design buildings in accordance with the Uniform Building Code.
- Incorporate remedial grading and design techniques into removal and replacement of liquefiable soils or construction of deep foundation systems.
- Remove reservoirs or prepare flood control plans for areas downstream of reservoirs.
- Perform static and pseudo-static slope stability analyses for proposed cut and fill slopes.
- Use standard engineering techniques to reduce soils related hazards as outlined in Section 4.5 of the previously certified EIR (EOMSP Final EIR).

B. Project-Specific Mitigation for Impacts to Geology and Soils

M-GS-1 **Intent**: In order to ensure appropriate engineering design measures and construction practices are implemented to mitigate the potential for deep-seated instability of slopes to established standards of safety. **Description of Requirement**: Within the Preliminary Geotechnical Investigation, Hawano East Otay Property, San Diego County, California, by Geocon, Inc. dated July 7, 2010, proposed cut slopes that expose the Otay Formation at the site were identified as requiring slope stabilization. All mitigation measures regarding slope stabilization contained within the grading section of the report shall be incorporated into the grading plans. **Documentation**: The applicant shall prepare the final grading plans to include slope stabilization measures to meet established standards of safety for approval by the *[DPW, LDR]*. The *Preliminary Geotechnical Investigation, Hawano East Otay Property, San Diego County, California*, by Geocon, Inc. dated July 7, 2010 (EIR Appendix H) shall be submitted along with the final grading plans. **Timing**: Prior to the approval of any grading plans or final map, the slope stabilization measures shall be required to be included. **Monitoring**: The *[DPW, LDR]* shall ensure that slope stabilization measures for proposed cut slopes that expose the Otay Formation are incorporated into the grading plans for the project.

7.1.5 Greenhouse Gas Emissions

A. Project-Specific Mitigation for Impacts due to Greenhouse Gas Emissions

M-GG-1a **Operational GHG Impacts**

Intent: In order to mitigate for impacts related to the proposed Project's GHG emissions, design measures shall be incorporated into future site plans to achieve the objectives of AB 32. **Description of Requirement:** Prior to the approval of future Site Plans for any lots within TM5566, the Project applicant shall prepare a Title 24 Compliance Report to identify measures incorporated into the Site Plan's design to reduce emissions of area-source Greenhouse Gases. The report shall identify measures that are physically and economically feasible to implement in the Site Plan design in order to achieve a performance standard of at least a 33% reduction of area source Greenhouse Gas emissions as compared to the 2005 Title 24 requirements. The Title 24 Compliance Report shall cite references that estimate Greenhouse Gas emissions

reductions associated with Site Plan design features, and shall provide emission reduction credits for those design features that result in quantifiable reductions in energy consumption. Examples of measures that would serve to assist in achieving the 33% GHG reduction target / performance standard may include, but shall not be limited to, the following (it being understood that certain of the measures described in the bullets below may be adopted by the Project applicant, to the extent such measures are found to be physically and economically feasible, in order to achieve the reductions specified above, and that not all or any such measures need to be adopted, and that other feasible measures not listed below may be adopted, as long as the above performance standard is met):

- Design buildings to use natural systems to reduce energy use. Locate and orient buildings to take advantage of shade, prevailing winds, landscaping and sun screens to reduce energy use.
- Design buildings to maximize water efficiency and reduce water use (excluding irrigation) beyond the Energy Policy Act of 1992 guidelines for fixture performance. This measure is expected to reduce GHG emissions associated with water conveyance by approximately 28-30%[1].
- Provide interior and exterior collection and storage areas for recyclables and green waste, in locations that are easily accessible to employees and visitors. The location of such storage areas shall be clearly labeled on future Site Plans. This will reduce the amount of waste generated by building occupants and hauled to and disposed of in landfills[2].
- For site lighting, the project's power density shall be more efficient than required by Title 24 as specified by LEED Energy & Atmosphere Credit 1. The amount of GHG reductions shall be calculated for the specific site lighting elements proposed as a part of future site plans pursuant to this standard, and shall be documented in the Title 24 Compliance Report.
- For warehouse lighting, use T5HO lighting fixtures providing that general lighting will be more efficient than required by Title 24 as specified by LEED Energy & Atmosphere Credit 1. The amount of GHG reductions shall be calculated for the specific warehouse lighting elements proposed as a part of future site plans pursuant to this standard, and shall be documented in the Title 24 Compliance Report.
- Install motion sensors on office lighting so that efficiency will be more efficient than required by Title 24 as specified by LEED Energy & Atmosphere Credit 1. The amount of GHG reductions shall be calculated for the specific motion

[1] The use of HET and EPA Certified WaterSense labeled faucets will result in a 30% reduction in water use from BAU conditions. Based on the LEED ® for New Construction Reference Guide, the typical flowrate for a water closet is 1.6 gallons per flush, for a low-flow water closet the flowrate is 1.1 gallons per flush which is an approximate 30% reduction in water usage. Additionally, a conventional kitchen sink has a flowrate of 2.5 gallons per minute and a conventional shower has a flowrate of 2.5 gallons per minute; the low-flow kitchen sink has a flowrate of 1.8 gallons per minute and the low-flow shower has a flowrate of 1.8 gallons per minute this is an approximate 28% reduction in water usage.

[2] This measure is consistent with the County of San Diego's Recycling Ordinance (Section 68.501 et seq. of the San Diego County Code of Regulatory Ordinances). Since the County's Recycling Ordinance exceeds the requirements of Title 24, GHG emission reductions above and beyond Title 24 requirements may be credited towards the Project's requirement to achieve a 33% reduction in emissions.

sensors proposed as a part of future site plans pursuant to this standard, and shall be documented in the Title 24 Compliance Report.

- Install skylights and energy efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors for office lighting.
- Install exterior signage, traffic, and other outdoor lighting that utilizes light-emitting diode (LED) lighting that is approximately 70 percent more efficient than fluorescent signage.
- Use light colored "cool" roofs, cool pavements, and strategically placed shade trees.
- Require orientation of buildings to maximize passive solar heating during cool seasons, avoid solar heat gain during hot periods, enhance natural ventilation, and promote effective use of daylight. Building orientation, wiring, and plumbing should optimize and facilitate opportunities for on-site solar generation and heating.
- Limit the hours of operation of outdoor lighting as specified to meet LEED Energy & Atmosphere Credit 1.
- Install the photovoltaic cells (solar panels) or "thin film" on roofs and parking lots (which can provide added benefits of shading vehicles) as specified by LEED Energy & Atmosphere Credit 2 to off-set the Project's energy consumption. If the energy conservation measures implemented do not reduce GHG emissions by 33%, solar panels shall be installed to fulfill the remainder of the 33% requirement.

The Title 24 Compliance Report shall only give emission reduction credits to those design features that are depicted on Site Plans or where evidence of compliance can otherwise be provided to the County DPLU. Approval of future Site Plans and/or construction permits shall not occur until it can be assured that the design features described in the Title 24 Compliance Report (or other measures meeting the performance criteria specified above) have been depicted on the Site Plan or construction drawings, or if it can otherwise be demonstrated that the design features will be incorporated into the proposed development.

Documentation: The applicant shall prepare the Site Plans pursuant to this mitigation measure and in accordance with DPLU Form #506, *Applicant's Guide to Site Plan*. The applicant shall submit the Site Plans to the Department of Planning and Land Use, along with all applicable review fees and deposits, and with evidence of compliance with as the requirements specified above. **Timing:** Pursuant to Section 3.3.1 of the EOMSP, review for compliance with this mitigation measure shall occur prior to approval of future Site Plans for the site. **Monitoring:** The Department of Planning and Land Use shall review the Site Plans for conformance with this mitigation measure.

M-GG-1b **Operational GHG Impacts (Truck Idling)**

Intent: In order to mitigate for GHG-related impacts caused by trucks idling on-site under long-term operating conditions. **Description of Requirement:** Strategies shall be incorporated to reduce idling time of trucks through alternative technologies such as IdleAire, electrification of truck parking, and alternative energy sources to allow diesel

enegines to be completely turned off. These strategies shall be placed on future site plans (e.g., location of electric truck parking locations and alternative energy sources). **Documentation**: The applicant shall prepare the Site Plans pursuant to this mitigation measure and in accordance with DPLU Form #506, Applicant's Guide to Site Plan. The applicant shall submit the Site Plans to the Department of Planning and Land Use, along with all applicable review fees and deposits, along with evidence of compliance. **Timing:** Pursuant to Section 3.3.1 of the EOMSP, review for compliance with this mitigation measure shall occur prior to approval of future Site Plans for the site. **Monitoring:** The Department of Planning and Land Use shall review the Site Plans for conformance with this mitigation measure.

7.1.6 Mitigation for Impacts to Noise

A. Mitigation Measures from the EOMSP Final EIR

8A. Noise sensitive land uses, including existing and proposed residences and all California gnatcatcher habitat, located within the estimated 60 CNEL noise contour shall have site specific noise studies prepared prior to approval of discretionary permits. Siting of industrial and commercial uses shall be such that adequate setbacks are created to minimize off-site noise impacts to sensitive receptors.

8B. Residential development shall be avoided in the areas where the projected CNEL noise contour for Brown Field exceeds 60 dB.

8C. All construction operations shall comply with the San Diego County Construction Noise Ordinance (Section 36.410). All construction operations scheduled to occur within 1,500 feet of California gnatcatcher habitat shall prepare a project specific noise mitigation and monitoring program to demonstrate compliance with established noise standards.

8D. Project specific noise analyses shall be required in the hillside residential district prior to approval of projects in this area to assure noise compatibility with adjacent projects, specifically the offroad vehicle park and the San Diego International Raceway.

B. Project-Specific Mitigation for Noise Impacts

M-N-1 **TEMPORARY NOISE IMPACTS: [DPLU, PCC] [DPW, PDCI] [DPLU, FEE X1]**
Intent: In order to comply with the County of San Diego Noise Ordinance 36.409, the following noise attenuation measures shall be implemented to reduce the cumulative sound levels generated from project grading operations. **Description of Requirement:** If cumulative grading operations are simultaneously occurring at a shared property line where an occupied structure is located, construction equipment operations shall be relocated to a distance of 225 feet from the shared property line. **Documentation:** The applicant shall provide a letter of agreement to this condition. **Timing:** The required actions shall occur throughout the duration of the grading operations. **Monitoring:** The [DPLU, PCC] shall review the letter of agreement of this condition to demonstrate compliance with County construction noise standards (Noise Ordinance, Section 36.409).

7.1.7 Mitigation for Impacts to Paleontological Resources

A. Project-Specific Mitigation for Paleontological Resources Impacts

M-PR-1a **PALEO GRADING MONITORING:** ***[DPLU, PCC] [DPW, LDR] [GP, IP, UO] [DPLU, FEE X 2]***

Intent: In order to mitigate for potential impacts to paleontological resources on the project site, a monitoring program during grading, trenching or other excavation into undisturbed rock layers beneath the soil horizons and a fossil recovery program, if significant paleontological resources are encountered, shall be implemented pursuant to the County of San Diego Guidelines for Determining Significance for Paleontological Resources. **Description of Requirement**: A County approved Paleontologist "Project Paleontologist" shall be contracted to perform paleontological resource monitoring and a fossil recovery program if significant paleontological resources are encountered during all grading, trenching, or other excavation into undisturbed rock layers beneath the soil horizons. The following shall be completed:

a. A County approved Paleontologist ("Project Paleontologist") shall perform the monitoring duties pursuant to the most current version of the County of San Diego Guidelines for Determining Significance for Paleontological Resources, and this permit. The contract provided to the county shall include an agreement that the grading/ trenching/excavation monitoring will be completed, and a Memorandum of Understanding (MOU) between the approved Paleontologist and the County of San Diego shall be executed. The contract shall include a cost estimate for the monitoring work and reporting.

b. The cost of the monitoring shall be added to the grading bonds that will be posted with the Department of Public Works, or bond separately with the Department of Planning and Land Use.

Documentation: The applicant shall provide a copy of the Grading Monitoring Contract, cost estimate, and MOU to the *[DPLU, PCC]*. Additionally, the cost amount of the monitoring work shall be added to the grading bond cost estimate. **Timing**: Prior to approval of any grading and or improvement plans and issuance of any Grading or Construction Permits. **Monitoring**: The *[DPLU, PCC]* shall review the contract, MOU and cost estimate or separate bonds for compliance with this condition. The cost estimate should be forwarded to *[DPW, Project Manager]*, for inclusion in the grading bond cost estimate, and grading bonds. The *[DPW, PC]* shall add the cost of the monitoring to the grading bond costs, and the grading monitoring requirement shall be made a condition of the issuance of the grading or construction permit.

M-PR-1b **PALEO RESOURCES REPORT:** ***[DPLU, PCC] [UO, FG] [DPLU, FEE X 2]***

Intent: In order to ensure that the Grading Monitoring occurred during the grading, trenching or other excavation phase of the project pursuant to the Paleo Grading Monitoring Condition a final report shall be prepared. **Description of Requirement:** A final Paleontological Resources Mitigation Report that documents the results, analysis, and conclusions of all phases of the Paleontological Monitoring Program shall be prepared. The report shall and include the following items:

a. If **no** paleontological resources were discovered, submit a Negative letter report, which states that the monitoring has been completed and that no paleontological resources were discovered.

b. If resources **were** discovered and recovered during grading, a detailed report shall be prepared by the Project Paleontologist. The report shall comply with the County of San Diego's Guidelines for Determining Significance for Paleontological Resources. The report shall identify which accredited institution has agreed to accept the curated fossils and include proof of the Transfer of Paleontological Resources, in the form of a letter, from the director of the paleontology department of the accredited institution to the Director of DPLU verifying that the curated fossils from the project site have been received by the institution."

Documentation: The Project Paleontologist shall prepare the final report and submit it to the *[DPLU, PCC]* for approval. If resources were discovered then the applicant shall complete the following:

a. Transfer the cataloged fossil remains and copies of relevant field notes, maps, stratigraphic sections, and photographs to an accredited institution (museum or university) in California that maintains paleontological collections for archival storage and/or display, and

b. The applicant shall Submit TWO hard copies of the final Paleontological Resources Mitigation Report to the *[DPLU, PCC]* for final approval of the mitigation, and submit an electronic copy of the complete report in Microsoft Word on a CD. In addition, submit one copy of the report to the San Diego Natural History Museum and one copy to the institution that received the fossils.

Timing: Prior to any occupancy, final grading release, or use of the premises in reliance of this permit, the final report shall be prepared. **Monitoring:** The *[DPLU, PCC]* shall review the final report for compliance this condition and the report format guidelines. Upon acceptance of the report, *[DPLU, PCC]* shall inform *[DPW, LDR]* and *[DPW, PDCI]*, that the requirement is complete and the bond amount can be relinquished. If the monitoring was bonded separately, then *[DPLU, PCC]* shall inform *[DPLU, FISCAL]* to release the bond back to the applicant.

M-PR-2 Mitigation Measures M-PR-1a and M-PR-1b shall apply.

7.1.8 Mitigation for Impacts to Transportation/Traffic

A. Applicable Mitigation from EOMSP EIR

7A. The County of San Diego shall work with the Cities of san Diego and Chula Vista to resolve inconsistencies in future roadway designations and shall coordinate roadway design at jurisdictional boundaries.

7B. Prior to the formation of an assessment district to fund the implementation of the regional Circulation Element, projects within the East Otay Mesa Specific Plan are required to provide a traffic impact report to analyze and mitigate their off-site traffic impacts.

B. Project-Specific Mitigation for Transportation/Traffic Impacts

M-TR-1 **OTAY MESA ROAD IMPROVEMENTS [DPW] [Final Map]**

Intent: To mitigate impacts to the segment of Otay Mesa Road between Sanyo Avenue and Enrico Fermi Drive that would occur during Project Phase 1. **Description of Requirement:** The Project applicant or Master Developer shall improve the roadway segment of Otay Mesa Road between Sanyo Avenue and Enrico Fermi Drive to provide a four-lane facility with two lanes in each direction. **Documentation:** The applicant shall prepare improvement plans for roadway improvements and shall submit the plans to the Department of Public Works for review and approval. Upon approval of the plans and completion of improvements, the applicant shall provide the Department of Public Works evidence of completed improvements. **Timing:** Improvements shall be completed prior to recordation of the Final Map for Unit 1. **Monitoring:** The Department of Public Works shall review the improvement plans for conformance with this mitigation measure. Upon approval of the improvement plans, a decision of approval shall be issued to the applicant. Following final inspection, the Department of Public Works shall provide the applicant with a letter of acceptance for the completed improvements. **Traffic Study References:** Section VIII and Figure 38.

M-TR-2 **OTAY MESA ROAD/ENRICO FERMI DRIVE INTERSECTION IMPROVEMENTS [DPW] [Final Map]**

Intent: To mitigate direct impacts to the intersection of Otay Mesa Road/Enrico Fermi Drive that would result from implementation of Phases 1 and 2 of the proposed Project. **Description of Requirement:** The Project applicant or Master Developer shall modify the existing traffic signal and shall assure the widening of the intersection of Otay Mesa Road/Enrico Fermi Drive to accommodate the following lane configurations:

- One (1) eastbound through lane;
- One (1) eastbound right turn lane;
- One (1) westbound left turn lane;
- One (1) westbound through lane;
- One (1) northbound left turn lane; and
- One (1) northbound right turn lane.

Documentation: The applicant shall prepare improvement plans for roadway improvements and shall submit the plans to the Department of Public Works for review and approval. Upon approval of the plans and completion of improvements, the applicant shall provide the Department of Public Works evidence of completed improvements. **Timing:** Improvements shall be completed prior to recordation of the Final Map for Unit 2. **Monitoring:** The Department of Public Works shall review the improvement plans for conformance with this mitigation measure. Upon approval of the improvement plans, a decision of approval shall be issued to the applicant. Following final inspection, the Department of Public Works shall provide the applicant with a letter of acceptance for the completed improvements. **Traffic Study References:** Section VIII and Figure 39.

M-TR-3a **SIEMPRE VIVA ROAD IMPROVEMENTS [DPW] [Final Map]**

Intent: To mitigate impacts to the segment of Siempre Viva Road between Enrico Fermi Drive and Airway Place that would occur during Project Phase 1. **Description of Requirement:** The Project applicant or Master Developer shall improve the roadway segment of Siempre Viva Road between the CHP facility access east of Enrico Fermi

Drive and Airway Place to provide a two-lane facility with one lane in each direction. **Documentation:** The applicant shall prepare improvement plans for roadway improvements and shall submit the plans to the Department of Public Works for review and approval. Upon approval of the plans and completion of improvements, the applicant shall provide the Department of Public Works evidence of completed improvements. **Timing:** Improvements shall be completed prior to recordation of the Final Map for Unit 1. **Monitoring:** The Department of Public Works shall review the improvement plans for conformance with this mitigation measure. Upon approval of the improvement plans, a decision of approval shall be issued to the applicant. Following final inspection, the Department of Public Works shall provide the applicant with a letter of acceptance for the completed improvements. **Traffic Study References:** Section VIII.

M-TR-3b **TRAFFIC CONTROL PLAN [DPW] [Final Map]**
Intent: To preclude significant traffic impacts during each phase of proposed construction activities. **Description of Requirement:** The Project applicant or Master Developer shall obtain a traffic control permit from the County Department of Public Works prior to each phase of construction. **Documentation:** The required Traffic Control Permit would serve as documentation of the applicant's adherence to this requirement. **Timing:** Prior to issuance of grading or improvement plans for each unit authorizing construction within or adjacent to existing roadways. **Monitoring:** The Department of Public Works shall ensure that the applicant has obtained a Traffic Control Permit prior to issuance of any permits to construct improvements within or adjacent to existing roadways.

M-TR-4 The Project applicant or Master Developer would be required to pay fees in accordance with the San Diego County TIF Ordinance. Payment of TIF fees would reduce Project impacts to the roadway segment of Otay Mesa Road between Enrico Fermi Derive and Alta Road to less than significant levels.

M-TR-5 The Project applicant or Master Developer would be required to pay fees in accordance with the San Diego County TIF Ordinance. Payment of TIF fees would reduce Project impacts to the roadway segment of Enrico Fermi Drive between Otay Mesa Road and Airway Road to less than significant levels.

M-TR-6 The Project applicant or Master Developer would be required to pay fees in accordance with the San Diego County TIF Ordinance. Payment of TIF fees would reduce Project impacts to the roadway segment of Alta Road between Lone Star Road (Paseo de la Fuente) and Otay Mesa Road to less than significant levels.

M-TR-7 The Project applicant or Master Developer would be required to pay fees in accordance with the San Diego County TIF Ordinance. Payment of TIF fees would reduce Project impacts to the intersection of Otay Mesa Road/Michael Faraday Drive to less than significant levels.

M-TR-8 The Project applicant or Master Developer would be required to pay fees in accordance with the San Diego County TIF Ordinance. Payment of TIF fees would reduce Project impacts to the intersection of Otay Mesa Road/Enrico Fermi Drive to less than significant levels.

M-TR-9 The Project applicant or Master Developer would be required to pay fees in accordance with the San Diego County TIF Ordinance. Payment of TIF fees would reduce Project impacts to the intersection of Otay Mesa Road/Alta Road to less than significant levels.

M-TR-10 **AIRWAY ROAD/SANYO AVENUE INTERSECTION IMPROVEMENTS [DPW] [Final Map]**

Intent: To mitigate significant impacts to the intersection of Airway Road/Sanyo Avenue that would occur in the Cumulative (2020) With SR-905 Phases 1A and 1B conditions. **Description of Requirement:** The Project applicant or Master Developer shall improve or agree to improve and provide security for the intersection of Airway Road/Sanyo Avenue as recommended by the Traffic Impact Study (refer to Traffic Impact Study Figure 40) and in consultation with the City of San Diego. Required improvements for the intersection of Airway Road/Sanyo Avenue shall include the following, or any other configuration acceptable to the City of San Diego and the County of San Diego and that achieves an acceptable level of service:

- Installation of a traffic signal;
- One (1) eastbound shared left-through-right lane;
- One (1) westbound left turn lane;
- One (1) westbound through lane;
- One (1) westbound right turn lane;
- One (1) northbound left turn lane;
- One (1) northbound shared through-right turn lane;
- One (1) southbound shared left-through lane; and
- One (1) southbound right turn lane.

It should be noted that the mitigation proposed for Project impacts to this intersection are subject to approval by the City of San Diego and therefore may not be feasible. In addition, the required improvements also may not be feasible due to financial or right-of-way issues. In the event the improvements are determined to be infeasible, impacts would remain significant and unmitigable. **Documentation:** The Project applicant or Master Developer shall submit documentation from the City of San Diego demonstrating the requirements of this condition have been completed. **Timing:** The improvements shall be fully constructed to the satisfaction of the City of San Diego prior to the recordation of the Final Map for Unit 1. **Monitoring:** The Director of Planning and Land Use shall review the evidence provided by the applicant for compliance with this mitigation measure. Following review, the Director of Planning and Land Use shall provide the applicant with a letter of clearance. **Traffic Study References:** Section VIII and Figure 40.

M-TR-11 The Project applicant or Master Developer would be required to pay fees in accordance with the San Diego County TIF Ordinance. Payment of TIF fees would reduce Project impacts to the intersection of Airway Road/Paseo de las Americas to less than significant levels.

M-TR-12 **SIEMPRE VIVA/MICHAEL FARADAY INTERSECTION IMPROVEMENTS [DPW] [Final Map]**

Intent: To mitigate direct impacts to the intersection of Siempre Viva /Michael Faraday that would occur in the Cumulative (2020) With SR-905 Phases 1A and 1B conditions. **Description of Requirement:** The Project applicant or Master Developer shall assure

that the intersection of Siempre Viva Road/Michael Faraday is modified or restriped as necessary to accommodate the following lane configurations as recommended by the Traffic Impact Study for this Project and in consultation with the City of San Diego:

- Installation of a traffic signal;
- One (1) eastbound left turn lane;
- One (1) eastbound through lane;
- One (1) eastbound shared through-right lane;
- One (1) westbound left turn lane;
- One (1) westbound through lanes;
- One (1) westbound shared through-right lane;
- One (1) northbound shared left-through-right turn lane;
- One (1) southbound shared left-through lane; and
- One (1) southbound right turn lane.

It should be noted that the mitigation proposed for Project impacts to this intersection are subject to approval by the City of San Diego and therefore may not be feasible. In addition, the required improvements also may not be feasible due to financial or right-of-way issues. In the event the improvements are determined to be infeasible, impacts would remain significant and unmitigable. **Documentation:** The Project applicant or Master Developer shall submit documentation from the City of San Diego demonstrating the requirements of this condition have been completed. **Timing:** Prior to the recordation of the Final Map for Unit 1. **Monitoring:** The Director of Planning and Land Use shall review the evidence provided by the applicant for compliance with this mitigation measure. Following review, the Director of Planning and Land Use shall provide the applicant with a letter of clearance. **Traffic Study References:** Section VIII and Figure 40.

M-TR-13 Mitigation Measure M-TR-3 shall apply.

7.2 Environmental Design Considerations

7.2.1 Air Quality

- The proposed Project shall comply with Section 87.428, Dust Control Measures, of the San Diego Grading, Clearing, and Watercourse Ordinance (Ordinance No. 9547).

- Construction vehicles shall comply with California Vehicle Code Section 23114, which requires all trucks hauling dirt, sand, soil, or other loose materials to be covered with a tarp and maintain at least twelve inches of freeboard.

- Prior to recordation of a Final Map for each phase of the proposed Project, the County DPW shall ensure that the grading plan includes a note that prohibits site demolition and mass grading activities from overlapping with each other or with other phases of construction activity.

7.2.2 Biological Resources

- The Off-Site Resource Management Plan (provided as Appendix H to the biological impact analysis, which is included as Appendix C to this SEIR), prepared by Helix Environmental, Inc., shall be implemented for the site improvement areas.

- The proposed Project shall comply with the best management practices as described in the Project's Stormwater Management Plan to ensure compliance with the County's Grading, Clearing, and Watercourse Ordinance.

- As a component of future Site Plans, a landscape plan shall be prepared which incorporates native plant species. Exotic or invasive plant species shall be prohibited.

- All graded areas shall be hydro-seeded with a native plant mix within six months of completion of each phase of grading except where subsequent construction activities (i.e., site improvements, building construction, etc.) are proposed.

7.2.3 Geologic Hazards

A. General Recommendations

- The existing topsoil materials are highly expansive and potentially compressible and therefore unsuitable in their present condition for the support of compacted fill or settlement-sensitive improvements. Remedial grading of the topsoil will be required, as noted below under the Grading requirements.

- Proposed cut slopes that expose the Otay Formation will require slope stabilization, as provided under the Grading requirements.

- The proposed industrial buildings and retaining walls may be supported on conventional foundations bearing in either competent formational materials or properly compacted fill. A qualified geologist shall evaluate the building foundation systems when the locations of these structures have been finalized. Transitioning foundations and slabs from formational material to compacted fill shall be evaluated. Formational over-excavations may be required where engineered fill is to be utilized for foundation support. This will require future evaluation once the building locations have been finalized. See also the specific requirements for the design of shallow foundations.

- Proper drainage shall be maintained in order to preserve the engineering properties of the fill in both the building pads and slope areas. See also the requirements for site drainage.

B. Soil Characteristics

- The soil encountered in the field investigation is considered to be "expansive" (Expansion Index [EI] greater than 20) as defined by 2007 California Building Code (CBC) Section 1802.3.2. Table 7-1 presents soil classifications based on the expansion index.

Table 7-1 SOIL CLASSIFICATION BASED ON EXPANSION INDEX

Expansion Index (EI)	Soil Classification
0 – 20	Very Low
21 – 50	Low
51 – 90	Medium
91 – 130	High
Greater Than 130	Very High

- Based on laboratory tests of representative samples of the materials expected at proposed grades presented in Appendix B (Table B-III) to the Project's Geotechnical Investigation (SEIR Appendix H), the on-site material is expected to possess a "very low" to "very high" expansion potential (Expansion Index greater than 130). The topsoil and claystone layers within the Otay Formation will likely possess a "high" to "very high" expansion potential (Expansion Index of 91 to greater than 130). The siltstone layers within the Otay Formation are expected to have a "medium" to "high" expansion potential (Expansion Index of 51 to less than 130). The sandstone portions of the Otay Formation and the Very Old Paralic Deposits Undivided will likely possess a "very low" to "low" expansion potential (Expansion Index of 50 or less). Additional testing for expansion potential shall be performed once final grades are achieved.

- Laboratory tests were performed on samples of the site materials to evaluate the percentage of water-soluble sulfate content. Results from the laboratory water-soluble sulfate content tests are presented in Appendix B to the Geotechnical Investigation (SEIR Appendix H) and indicate that the on-site materials at the locations tested possess "negligible" to "moderate" sulfate exposure to concrete structures as defined by 2007 CBC Section 1904.3 and ACI 318. Table 7-2 presents a summary of concrete requirements set forth by 2007 CBC Section 1904.3 and ACI 318. The presence of water-soluble sulfates is not a visually discernible characteristic; therefore, other soil samples from the site could yield different concentrations. Additionally, over time landscaping activities (i.e., addition of fertilizers and other soil nutrients) may affect the concentration. Additional corrosion testing of the finish grade soils shall be performed during grading.

- Further evaluation by a corrosion engineer shall be performed if improvements that could be susceptible to corrosion are planned.

Table 7-2 REQUIREMENTS FOR CONCRETE EXPOSED TO SULFATE-CONTAINING SOLUTIONS

Sulfate Exposure	Exposure Class	Water-Soluble Sulfate Percent by Weight	Cement Type	Maximum Water to Cement Ratio by Weight	Minimum Compressive Strength (psi)
Negligible	S0	0.00-0.10	--	--	2,500
Moderate	S1	0.10-0.20	II	0.50	4,000
Severe	S2	0.20-2.00	V	0.45	4,500
Very Severe	S3	> 2.00	V+Pozzolan or Slag	0.45	4,500

C. Seismic Design Criteria

- For seismic design, the Table 7-3 summarizes site-specific design criteria per the 2007 CBC, Chapter 16, *Structural Design*, Section 12613, *Earthquake Loads*. Soil values C and D will be present on the site depending on the thickness of fill soil beneath a particular proposed building. The short spectral response has a period of 0.2 second.

Table 7-3 CBC SEISMIC DESIGN PARAMETERS

Parameter	Value		IBC-06 Reference
Site Class	C	D	Table 1613.5.2
Fill Thickness, T	T<20 feet	T≥20 feet	--
Spectral Response – Class B (short), S_S	0.921g	0.921g	Figure 1613.5(3)
Spectral Response – Class B (1 sec), S_1	0.335g	0.335g	Figure 1613.5(4)
Site Coefficient, F_a	1.031	1.131	Table 1613.5.3(1)
Site Coefficient, F_v	1.465	1.730	Table 1613.5.3(2)
Maximum Considered Earthquake Spectral Response Acceleration (short), S_{MS}	0.950g	1.042g	Section 1613.5.3 (Eqn 16-37)
Maximum Considered Earthquake Spectral Response Acceleration (1 sec), S_{M1}	0.490g	0.579g	Section 1613.5.3 (Eqn 16-38)
5% Damped Design Spectral Response Acceleration (short), S_{DS}	0.633g	0.695g	Section 1613.5.4 (Eqn 16-39)
5% Damped Design Spectral Response Acceleration (1 sec), S_{D1}	0.327g	0.386g	Section 1613.5.4 (Eqn 16-40)

D. Grading

- Grading shall be performed in accordance with the Recommended Grading Specifications contained in Appendix C to the Geotechnical Evaluation (SEIR Appendix H) and the County of San Diego Grading Ordinance.

- Prior to commencing grading, a preconstruction conference shall be held at the site with the county inspector, owner or developer, grading contractor, civil engineer, environmental consultant, and geotechnical engineer in attendance. Special soil handling and/or the grading plans shall be discussed at that time.

- Site preparation shall begin with the removal of deleterious material, debris and vegetation. The depth of removal should be such that material exposed in cut areas or soil to be used as fill is relatively free of organic matter. Material generated during stripping and/or site demolition should be exported from the site.

- Abandoned buried utilities (if encountered) shall be removed and the resultant depressions and/or trenches shall be filled with properly compacted material as part of the remedial grading.

- Topsoil within the limits of grading shall be removed to expose firm formational materials. The actual depth of removal shall be evaluated by the geotechnical engineering consultant during the grading operations. The topsoil and soil with an Expansion Index greater than 90 shall be placed in deeper fill areas at least 6 feet from finish sheet-grade elevations. The bottom of the excavations shall be scarified to a depth of at least 1 foot, moisture conditioned as necessary, and properly compacted. The outer portion of the existing fill slopes will require benching to remove the loose upper portion during grading operations.

- The sandy portion of the Old Paralic Deposits may be encountered within the bottom of the planned basin at the southern portion of the property. Water that enters the basin may infiltrate into the cohesionless sand layers and could cause distress down gradient. The upper three feet of the basin and the outer five feet of the sidewalls of the basin shall be removed and replaced with properly compacted finer grained soils. The existing finer grained soils within the Otay Formation should be used for the fill within the basin to prevent water from infiltrating into the cohesionless sand layers.

- The geotechnical engineering consultant shall observe the removal bottoms to check the exposure of the formational materials. Deeper excavations may be required if highly weathered formational material is present at the base of the removals.

- The site shall be brought to final finish grade elevations with fill compacted in layers. Layers of fill should be no thicker than will allow for adequate bonding and compaction. Fill, including backfill and scarified ground surfaces, should be compacted to a dry density of at least 90 percent of the laboratory maximum dry density near to slightly above optimum moisture content in accordance with ASTM D 1557. Fill materials placed below optimum moisture content may require additional moisture conditioning prior to placing additional fill.

- Import fill (if necessary) shall consist of granular materials with a "very low" to "medium" expansion potential (EI of 90 or less) generally free of deleterious material and rock fragments larger than 3 inches if used for capping and should be compacted as recommended herein. The Project geotechnical consultant shall be notified of the import soil source and shall perform laboratory testing of import soil prior to its arrival at the site to evaluate its suitability as fill material.

- Cut slopes located within weak and/or sheared claystone and/or siltstone beds of the Otay Formation will require stability fills. In addition, cut slopes exposing cohesionless sands within the Very Old Paralic Deposits Undivided may also require stability fills. In general, the Typical Stability Fill Detail presented on Figure 4 of the Project's Geotechnical Study (SEIR Appendix H) shall be used for design and construction of stability fills, where required. The backcut for the stability fills should commence at least 10 feet from the top of the proposed finish-graded slope and should extend at least 3 feet into formational material. The drains and outlets shall be surveyed for proper line and gradient to check flow and to evaluate future outlet or drain tie-in locations by the project civil engineer.

- Cut slope excavations including fill slope shear keys and stability fills shall be observed during grading operations to check that soil and geologic conditions do not differ significantly from those expected.

- The outer 15 feet (or a distance equal to the height of the slope, whichever is less) of fill slopes shall be composed of properly compacted granular "soil" fill to reduce the potential for surficial sloughing. In general, soil with an Expansion Index of 90 or less and at least 35 percent sand-size particles should be acceptable as granular "soil" fill. Soil of questionable strength to satisfy surficial stability shall be tested in the laboratory for acceptable drained shear strength. The use of cohesionless sand in the outer portion of fill slopes shall be avoided. Fill slopes shall be overbuilt at least 2 feet and cut back or be compacted by backrolling with a loaded sheepsfoot roller at vertical intervals not to exceed 4 feet to maintain the moisture content of the fill. The slopes shall be track walked at the completion

of each slope such that the fill is compacted to a dry density of at least 90 percent of the laboratory maximum dry density near to slightly above optimum moisture content to the face of the finished slope.

- Finished slopes shall be landscaped with drought-tolerant vegetation having variable root depths and requiring minimal landscape irrigation. In addition, the slopes shall be drained and properly maintained to reduce erosion.

E. Earthwork Grading Factors

- Estimates of bulking and shrinkage factors are based on empirical judgments comparing the material in its natural state as encountered in the exploratory excavations to a compacted state. Variations in natural soil density and in compacted fill density render shrinkage value estimates very approximate. As an example, the contractor can compact the fill to a dry density of 90 percent or higher of the laboratory maximum dry density. Thus, the contractor has an approximately 10 percent range of control over the fill volume. Bulking of rock units is a function of rock density, structure, overburden pressure, and the physical behavior of blasted material. The shrinkage and bulking factors presented in Table 7-4 can be used as a basis for estimating how much the on site soil may shrink or swell (bulk) when excavated from their natural state and placed as compacted fill. Please note that these estimates are for preliminary quantity estimates only. Due to the variations in the actual shrinkage/bulking factors, a balance area that can also accommodate rock should be provided to accommodate these variations.

F. Conventional Shallow Foundations

- The proposed industrial buildings can be supported on a conventional shallow foundation system bearing on compacted fill. The recommendations provided herein are applicable for soils with an expansion index of 90 or less within the upper 4 feet of finish grade. Foundation for the structure should consist of continuous strip footings and/or isolated spread footings. Continuous footings should be at least 12 inches wide and extend at least 24 inches below lowest adjacent pad grade. Isolated spread footings should have a minimum width and depth of 24 inches. For building pads with finish grade soil with an expansion index between 90 and 130, the depth of the foundations should be extended to at least 36 inches below lowest adjacent pad grade.

Table 7-4 SHRINKAGE AND BULK FACTORS

Soil Unit	Shrink/Bulk Factor
Topsoil (unmapped)	10-15 % shrink
Otay Formation (To)	2-4 % bulk
Very old Paralic Deposits Undivided	2 % shrink to 2 % bulk

- Steel reinforcement for continuous footings should consist of at least four No. 5 steel reinforcing bars placed horizontally in the footings; two near the top and two near the bottom. Steel reinforcement for the spread footings should be designed by the project structural engineer. A typical wall/column footing dimension detail is presented on Figure 8 of the Geotechnical Report (SEIR Appendix H).

- The recommended allowable bearing capacity for foundations with minimum dimensions described herein is 2,500 pounds per square foot (psf) for footings bearing in compacted fill soil. The allowable soil bearing pressure may be increased by an additional 500 psf for each additional foot of depth and 300 psf for each additional foot of width, to a maximum allowable bearing capacity of 4,000 psf for footings founded in compacted fill soil. The values presented above are for dead plus live loads and may be increased by one-third when considering transient loads due to wind or seismic forces.

- The total and differential settlements under the imposed allowable loads are estimated to be ½ inch.

- Foundation excavations shall be observed by the geotechnical engineer prior to the placement of reinforcing steel to check that the exposed soil conditions are similar to those expected and that they have been extended to the appropriate bearing strata. If unexpected soil conditions are encountered, foundation modifications may be required.

G. Concrete Slabs-on-Grade

- Interior concrete slabs-on-grade for the buildings should be at least 5 inches thick. As a minimum, reinforcement for slabs-on-grade should consist of No. 4 steel reinforcing bars placed at 18 inches on center in both horizontal directions. The slab thickness may need to be increased if forklift loads are imposed. The structural engineer shall be consulted to determine the proper slab thickness.

- The concrete slab-on-grade recommendations are based on soil support characteristics only. The project structural engineer shall evaluate the structural requirements of the concrete slabs for supporting equipment and storage loads.

- Concrete slabs on grade should be underlain by 4 inches of clean sand to reduce the potential for differential curing, slab curl, and cracking. Slabs that may receive moisture-sensitive floor coverings or may be used to store moisture-sensitive materials should be underlain by a vapor retarder placed near the middle of the sand bedding. The vapor retarder used should be specified by the project architect or developer based on the type of floor covering that will be installed. The vapor retarder design should be consistent with the guidelines presented in Section 9.3 of the American Concrete Institute's (ACI) Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials (ACI 302.2R-06).

- To control the location and spread of concrete shrinkage cracks, crack control joints should be provided. The crack control joints should be created while the concrete is still fresh using a grooving tool, or shortly thereafter using saw cuts. The structural engineer shall take into consideration criteria of the American Concrete Institute when establishing crack control spacing patterns.

- Special subgrade presaturation is not deemed necessary prior to placing concrete; however, the exposed foundation and slab subgrade soil should be moisture conditioned, as necessary, to maintain a moist condition as would be expected in any such concrete placement.

- Where buildings or other improvements are planned near the top of a slope steeper than 3:1 (horizontal:vertical), special foundations and/or design considerations are recommended due to the tendency for lateral soil movement to occur.

    - For fill slopes less than 20 feet high, building footings should be deepened such that the bottom outside edge of the footing is at least 7 feet horizontally from the face of the slope.

    - When located next to a descending 3:1 (horizontal to vertical) fill slope or steeper, the foundations should be extended to a depth where the minimum horizontal distance is equal to H/3 (where H equals the vertical distance from the top of the fill slope to the base of the fill soil) with a minimum of 7 feet but need not exceed 40 feet. The horizontal distance is measured from the outer, deepest edge of the footing to the face of the slope.

    - Although other improvements, which are relatively rigid or brittle, such as concrete flatwork or masonry walls, may experience some distress if located near the top of a slope, it is generally not economical to mitigate this potential. It may be possible, however, to incorporate design measures that would permit some lateral soil movement without causing extensive distress. The Project geotechnical consultant shall be consulted for specific recommendations.

- The recommendations presented herein are intended to reduce the potential for cracking of slabs and foundations as a result of differential movement. However, even with the incorporation of the recommendations presented herein, foundations and slabs-on-grade will still crack. The occurrence of concrete shrinkage cracks is independent of the soil supporting characteristics. Their occurrence may be reduced and/or controlled by limiting the slump of the concrete, the use of crack control joints and proper concrete placement and curing. Crack control joints should be spaced at intervals no greater than 12 feet. Literature provided by the Portland Concrete Association (PCA) and American Concrete Institute (ACI) present recommendations for proper concrete mix, construction, and curing practices, and should be incorporated into project construction.

H. Concrete Flatwork

- Exterior concrete flatwork not subject to vehicular traffic should be constructed in accordance with the recommendations herein. Slab panels should be a minimum of 4 inches thick and, when in excess of 8 feet square, should be reinforced with No. 3 reinforcing bars spaced 18 inches on center in both directions or 4 x 4 – W4.0/W4.0 (4 x 4 - 4/4) welded wire mesh to reduce the potential for cracking for subgrade soil with an Expansion Index of 90 or less. In addition, concrete flatwork should be provided with crack control joints to reduce and/or control shrinkage cracking. Crack control spacing should be determined by the project structural engineer based upon the slab thickness and intended usage. Criteria of the American Concrete Institute (ACI) should be taken into consideration when establishing crack control spacing. Subgrade soil for exterior slabs not subjected to vehicle loads should be compacted in accordance with criteria presented in the grading section prior to concrete placement. Subgrade soil should be properly compacted and the moisture content of subgrade soil should be evaluated prior to placing concrete.

- Even with the incorporation of the recommendations within the geotechnical report (SEIR Appendix H), the exterior concrete flatwork has a likelihood of experiencing some uplift due to expansive soil beneath grade; therefore, the reinforcement should overlap continuously in flatwork to reduce the potential for vertical offsets within flatwork. Additionally, flatwork should be structurally connected to the curbs, where possible, to reduce the potential for offsets between the curbs and the flatwork.

- Where exterior flatwork abuts the structure at entry or exit points, the exterior slab should be dowelled into the structure's foundation stemwall. This recommendation is intended to reduce the potential for differential elevations that could result from differential settlement or minor heave of the flatwork. Dowelling details should be designed by the project structural engineer.

I. Conventional Retaining Walls

- Retaining walls not restrained at the top and having a level backfill surface should be designed for an active soil pressure equivalent to the pressure exerted by a fluid density of 40 pounds per cubic foot (pcf). Where the backfill will be inclined at no steeper than 2:1 (horizontal to vertical), an active soil pressure of 55 pcf is recommended. These soil pressures assume that the backfill materials within an area bounded by the wall and a 1:1 plane extending upward from the base of the wall possess an EI of 90 or less. For those lots with finish grade soils having an EI greater than 90 and/or where backfill materials do not conform to the criteria herein, the Project geotechnical consultant shall be consulted for additional recommendations.

- Unrestrained walls are those that are allowed to rotate more than 0.001H (where H equals the height of the retaining portion of the wall in feet) at the top of the wall. Where walls are restrained from movement at the top, an additional uniform pressure of 7H psf should be added to the above active soil pressure.

- The structural engineer should determine the seismic design category for the project. If the project possesses a seismic design category of D, E, or F, the proposed retaining walls should be designed with seismic lateral pressure added to the active pressure. The seismic load exerted on the wall should be a triangular distribution with a pressure of 23H (where H is the height of the wall, in feet, resulting in pounds per square foot [psf]) exerted at the top of the wall and zero at the base of the wall. This is based on a peak site acceleration of 0.28g calculated form the 2007 California Building Code (SDS/2.5) and applying a pseudo-static coefficient of 0.5.

- Unrestrained walls will move laterally when backfilled and loading is applied. The amount of lateral deflection is dependant on the wall height, the type of soil used for backfill, and loads acting on the wall. The retaining walls and improvements above the retaining walls should be designed to incorporate an appropriate amount of lateral deflection as determined by the structural engineer.

- Retaining walls should be provided with a drainage system adequate to prevent the buildup of hydrostatic forces and waterproofed as required by the project architect. The soil immediately adjacent to the backfilled retaining wall should be composed of free draining material completely wrapped in Mirafi 140 (or equivalent) filter fabric for a lateral distance of 1 foot

for the bottom two-thirds of the height of the retaining wall. The upper one-third should be backfilled with less permeable compacted fill to reduce water infiltration. The use of drainage openings through the base of the wall (weep holes) is not recommended where the seepage could be a nuisance or otherwise adversely affect the property adjacent to the base of the wall. The recommendations herein assume a properly compacted granular (EI of 50 or less) free-draining backfill material with no hydrostatic forces or imposed surcharge load. Figure 9 presents a typical retaining wall drainage detail. If conditions different than those described are expected or if specific drainage details are desired, the Project's geotechnical engineer should be contacted for additional recommendations.

- In general, wall foundations having a minimum depth and width of 1 foot may be designed for an allowable soil bearing pressure of 2,000 psf, provided the soil within 4 feet below the base of the wall has an Expansion Index of 90 or less. The proximity of the foundation to the top of a slope steeper than 3:1 could impact the allowable soil bearing pressure. Therefore, the Project's geotechnical engineer should be consulted where such a condition is expected.

- The recommendations presented herein are generally applicable to the design of rigid concrete or masonry retaining walls having a maximum height of 8 feet. In the event that walls higher than 8 feet or other types of walls are planned, the Project's geotechnical engineer should be consulted for additional recommendations.

J. Lateral Loads

- For resistance to lateral loads, an allowable passive earth pressure equivalent to a fluid density of 350 pcf is recommended for footings or shear keys poured neat against properly compacted granular fill or undisturbed formational materials. The allowable passive pressure assumes a horizontal surface extending away from the base of the wall at least 5 feet or three times the height of the surface generating the passive pressure, whichever is greater. The upper 12 inches of material not protected by floor slabs or pavement should not be included in the design for lateral resistance.

- An allowable friction coefficient of 0.35 may be used for resistance to sliding between soil and concrete. This friction coefficient may be combined with the allowable passive earth pressure when determining resistance to lateral loads.

K. Preliminary Pavement Recommendations

- The final pavement sections for parking lots and roadways should be based on the R-Value of the subgrade soils encountered at final subgrade elevation. Streets should be designed in accordance with the County of San Diego specifications when final Traffic Indices and R value test results of subgrade soil are completed. The flexible pavement sections have been calculated to be in general conformance with the Caltrans Method of Flexible Pavement Design (Highway Design Manual, Section 608.4). Based on the results of laboratory R Value testing, an R-Value of 5 has been assumed for the subgrade soil for the purposes of this preliminary analysis. Preliminary flexible pavement sections are presented in Table 7-5.

Table 7-5 PRELIMINARY FLEXIBLE PAVEMENT SECTIONS

Location	Assumed Traffic Index	Assumed Subgrade R-Value	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
Parking stalls for automobiles and light-duty vehicles	5.0	5	3	10
Driveway areas within industrial pads	6.0	5	4	12
Roadways	7.0	5	5	14
Major Roadways	8.0	5	5	18

- The upper 12 inches of the subgrade soil should be compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content beneath pavement sections.

- Base materials should conform to Section 26-1.028 of the Standard Specifications for The State of California Department of Transportation (Caltrans) with a ¾-inch maximum size aggregate. Base materials should be compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. The asphalt concrete should conform to Section 203 6 of the Standard Specifications for Public Works Construction (Greenbook). Asphalt concrete should be compacted to a density of at least 95 percent of the laboratory Hveem density in accordance with ASTM D 2726.

- A rigid Portland cement concrete (PCC) pavement section should be placed in driveway entrance aprons and trash bin loading/storage areas. The concrete pad for trash truck areas should be large enough such that the truck wheels will be positioned on the concrete during loading. We calculated the rigid pavement section in general conformance with the procedure recommended by the American Concrete Institute report ACI 330R 01 Guide for Design and Construction of Concrete Parking Lots using the parameters presented in Table 7-6.

Table 7-6 RIGID PAVEMENT DESIGN PARAMETERS

Design Parameter	Design Value
Modulus of subgrade reaction, k	100 pci
Modulus of rupture for concrete, M_R	500 psi
Traffic Category, TC	A-1 and C
Average daily truck traffic, ADTT	10 and 100

- Based on the criteria presented herein, the PCC pavement sections should have a minimum thickness as presented in Table Table 7-7.

Table 7-7 PRELIMINARY RIGID PAVEMENT RECOMMENDATIONS

Location	Portland Cement Concrete (inches)
Automobile Parking Areas	6
Trash and Heavy Truck and Fire Lane Areas	7

- The PCC pavement should be placed over subgrade soil that is compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. This pavement section is based on a minimum concrete compressive strength of approximately 3,000 psi (pounds per square inch).

- A thickened edge or integral curb should be constructed on the outside of concrete slabs subjected to wheel loads. The thickened edge should be 1.2 times the slab thickness or a minimum thickness of 2 inches, whichever results in a thicker edge, at the slab edge and taper back to the recommended slab thickness 3 feet behind the face of the slab (e.g., a 7 inch-thick slab would have a 9-inch-thick edge). Reinforcing steel will not be necessary within the concrete for geotechnical purposes with the possible exception of dowels at construction joints as discussed below.

- To control the location and spread of concrete shrinkage cracks, crack-control joints (weakened plane joints) should be included in the design of the concrete pavement slab. Crack-control joints should not exceed 30 times the slab thickness with a maximum spacing of 15 feet (e.g., a 7-inch-thick slab would have a 15-foot spacing pattern) and should be sealed with an appropriate sealant to prevent the migration of water through the control joint to the subgrade materials. The depth of the crack-control joints should be determined by the referenced ACI report.

- To provide load transfer between adjacent pavement slab sections, a trapezoidal-keyed construction joint is recommended. As an alternative to the keyed joint, dowelling is recommended between construction joints. As discussed in the referenced ACI guide, dowels should consist of smooth, ⅞-inch-diameter reinforcing steel 14 inches long embedded a minimum of 6 inches into the slab on either side of the construction joint. Dowels should be located at the midpoint of the slab, spaced at 12 inches on center and lubricated to allow joint movement while still transferring loads. Other alternative recommendations for load transfer should be provided by the project structural engineer.

- The performance of asphalt concrete pavement is highly dependent on providing positive surface drainage away from the edge of the pavement. The ponding of water on or adjacent to pavement areas should not be allowed as it will likely result in pavement distress and subgrade failure. Drainage from landscaped areas should be directed to controlled drainage structures. Landscape areas adjacent to the edge of asphalt pavements are not recommended due to the potential for surface or irrigation water to infiltrate the underlying permeable aggregate base and cause distress. Where such a condition cannot be avoided, consideration should be given to incorporating measures that will significantly reduce the potential for subsurface water migration into the aggregate base. If planter islands are planned, the perimeter curb should extend at least 6 inches below the level of the base materials.

L. Site Drainage and Moisture Protection

- Adequate site drainage is critical to reduce the potential for differential soil movement, erosion and subsurface seepage. Under no circumstances should water be allowed to pond adjacent to footings. The site should be graded and maintained such that surface drainage is directed away from structures in accordance with 2007 CBC 1803.3 or other applicable standards. In addition, surface drainage should be directed away from the top of slopes into

swales or other controlled drainage devices. Roof and pavement drainage should be directed into conduits that carry runoff away from the proposed structure.

- In the case of basement walls or building walls retaining landscaping areas, a water-proofing system should be used on the wall and joints, and a Miradrain drainage panel (or similar) should be placed over the waterproofing. A perforated drainpipe of schedule 40 or better should be installed at the base of the wall below the floor slab and drained to an appropriate discharge area. Accordion-type pipe is not acceptable. The project architect or civil engineer should provide detailed specifications on the plans for all waterproofing and drainage.

- Underground utilities should be leak free. Utility and irrigation lines should be checked periodically for leaks, and detected leaks should be repaired promptly. Detrimental soil movement could occur if water is allowed to infiltrate the soil for prolonged periods of time.

- Landscaping planters adjacent to paved areas are not recommended due to the potential for surface or irrigation water to infiltrate the pavement's subgrade and base course. We recommend that area drains to collect excess irrigation water and transmit it to drainage structures or impervious above-grade planter boxes be used. In addition, where landscaping is planned adjacent to the pavement, we recommend construction of a cutoff wall along the edge of the pavement that extends at least 6 inches below the bottom of the base material.

- If detention basins, bioswales, retention basins, or water infiltration devices are being considered, the Project geotechnical engineer should be retained to provide recommendations pertaining to the geotechnical aspects of possible impacts and design. Distress may be caused to planned improvements and properties located hydrologically downstream. The distress depends on the amount of water to be detained, its residence time, soil permeability, and other factors. We have not performed a hydrogeology study at the site. Downstream properties may be subjected to seeps, springs, slope instability, raised groundwater, movement of foundations and slabs, or other impacts as a result of water infiltration.

M. Grading and Foundation Plan Review

- The Project's geotechnical engineer shall review the grading plans and foundation plans for the project prior to final design submittal to evaluate whether additional analysis and/or recommendations are required.

7.2.4 Hazards

Fire Safety

- Fuel Modification Zones will be required around all structures, and on roadsides, in compliance with the District and County Fire Codes. State law, County Fire Code and the Fire District require at least 100' fuel modification from buildings (inclusive of improved roadways). Therefore, Fuel Modification should be provided for a distance of 100' around all structures (or up to an adjoining structure if less than 100'.

- There shall be Fuel Modification Zones on each side of any onsite and public roadsides throughout the development. Fuel Modification Zones are required be 30' wide on each side of any new driveway or roadway, and 20' each side of any existing roadway per the County Fire Code. The zone may be a landscaped, irrigated wet zone, utilizing fire resistive

vegetation. Ground cover to be 4" or less. Any shrubs to be 2' or less. There shall be no flammable vegetation or flammable trees in the roadside, or center median, fuel modification zones or landscaped areas. Any trees shall be fire resistive and shall not be of a type prohibited in this plan. They should be spaced 30' between canopies. Trees to be limbed up 1/3 height or 6' whichever is greater. There shall not be closed canopies over public roads. Onsite roads to be clear to the sky. Any trees shall be planted 10' from edge of road to center of tree trunk. They will be maintained in compliance with this plan, by the Landscape Maintenance District (LMD) or other County approved legal entity, or an owners association or maintained by the property managers. Responsibility for the maintenance shall be included in a legal document to approval of County DPLU such as a contract with tenant, CC&R's or deed encumbrances. The property owner shall assure that proper roadside vegetation is done on an ongoing basis. No vegetation prohibited by the Project's fire protection plan shall be planted in this area. Erosion control and soil stability must be provided.

- 30' of clearance of native vegetation, weeds and brush shall be provided under and around LPG tanks. RFPD Fire Code requires 10'.

- Any detention basins must be kept clear of any flammable vegetation on an annual and ongoing basis.

- Plant species identified as being "prohibited" within Section 11.1.5.2 of the Fire Protection Plan (SEIR Appendix I) shall not be allowed within any fuel modification zones. Any other plant species determined by the County of San Diego to pose a hazard due to fire conditions also shall be prohibited.

- Prior to approval of any Site Plans, the size and configuration of the required fuel modification zones around buildings and roads shall be identified and depicted on the landscaping plans.

- There shall be no vegetation or trees that obstruct Fire Department operations, including access, raising of ladders, or use of fire hydrants and Fire Department connections. Onsite access roads should be kept clear to the sky with no overhanging canopies.

- Limit use of plants, which develop large amounts of foliage, branches, or dead material.

- Limit use of plants, which develop deciduous or shaggy bark.

- Limit use of plants, which develop dry or dead undergrowth.

- Recommended spacing of trees is a minimum of 20' feet between mature canopies.

- Tree canopies shall not reach to within 10' of chimneys or structures.

- No tree canopies overhanging any streets or onsite fire lanes around buildings as this can affect Fire Department ladder operations. Shrubs to be fire resistive. Shrubs shall be spaced to create a firebreak between groupings.

- Eliminate potential for vegetation on ground (ground fuels) to spread fire into trees (aerial fuels). This is known as eliminating the "fire laddering effect".

- Configure plantings so that they are spaced and maintained so as not to create a direct path from native growth to a structure.

- All plant species must be limited to those approved by the Fire District for this area.

- Prohibit massing of vegetation adjacent to structures, especially under eaves, overhangs, windows, vents, decks, within 10' of chimneys, etc.

- Vegetation management requirements and the provisions for continuous maintenance must be documented on landscape plans, any CC&R's, and deed encumbrances. It must be absolutely clear to building owners that they have a legal responsibility to maintain a fire safe defensible space on all sides of the structures in compliance with this plan and the Fire District requirements. The Fire District shall enforce all vegetation management requirements, and structural protection requirements on all private property, and assure vegetation management requirements are met. Yearly maintenance, before fire season (typically May 1, including during construction), and more often as needed, is required to reduce fuel volumes, eliminate weeds, remove dead vegetation, cut grass, limb up and prune, remove down and dead fuels, remove flammable under story, etc.

- Maintenance is also required after any storms or high winds to remove down and dead vegetation and combustible debris from properties and zones.

- If new planting is desired in areas of retained native vegetation, then an irrigation system shall be designed to sustain new plantings as needed. Caution should be used so as to not over irrigate natives and thereby increase the dead to live fuel ratio; negating the high leaf moisture.

- Caution must be used so as to not cause erosion or ground (including slope) instability, or excessive water runoff, due to planting, landscaping, vegetation removal, vegetation management, or irrigation.

- No combustible netting, matting, etc., in landscaped areas, on slopes, within 100' of a structure, other than when needed during construction.

- Permission is required from off-site parcel owners if any fuel modification is needed off-site of any parcel in this project, and on someone else's property.

- Permission must be obtained in advance from County DPLU, resource agencies, and any other applicable agencies, before doing vegetation management in any biologically sensitive areas or habitats or other regulated areas.

- If irrigation is somehow prohibited, or curtailed due to a drought, etc, any plants and vegetation that require irrigation may need to be removed and replaced with fire resistive drought tolerant plants or an alternative, equivalent, procedure will need approval of the RFPD.

- Special attention is needed for H-2 occupancies; those with combustible dusts involved, and which present a moderate explosion hazard or hazard from accelerated burning, per Section

307.4 of the 2007 California Building Code. This includes certain uses and storage of flammable liquids, oxidizers and class 3 water reactive materials. H-2 occupancies must be located at least 30' from a property line if the building is over 1000 square feet, per 2007 California Building Code Section 415.3.1.

- Buildings where explosion venting is required per 2007 California Fire Code Section 911 and 2007 California Building Code Section 415, require a clear vertical space above the building or an unobstructed 50' horizontal distance from the structure wall at a location where the explosion venting system is.

- Large quantities of exterior storage are discouraged due to the potential fire exposure hazard. Quantities of exterior storage should not exceed exempt quantities per tables in the Fire Code.

- All on-site roads, including driveways on individual lots must be paved to support heavy trucks. The County Fire Code requires the roads and driveways to support a 50,000-pound fire apparatus. Roads and driveways must meet these criteria and must also be designed to support heavy semi-trucks and fire trucks. It is recommended that all roads and on-site driveways be designed to withstand the weight of a future aerial ladder fire truck, which would be about 75,000 pounds. Note that the roads are not under construction as yet. They will reportedly be designed for heavy truckloads. Design of future on-site roads shall meet RFPD requirements and County requirements and shall also be designed to support an Aerial Ladder truck.

- All roads providing access to the lots are required to be named with proper signage at all intersections to approval of the Fire District and DPW.

- At signalized intersections, the developer is required by the Fire District to install pre-emptive traffic devices (Opticom).

- On-site fire apparatus roads on individual lots should be at least 26’ wide unobstructed width (unobstructed by parking). It needs to be clear to the sky of any overhangs. For buildings 28’ high from accessible grade and for large buildings the road width needs to be 28’ unobstructed width clear to the sky for ground and aerial ladder operations. Such roads shall be between 15’ to a maximum of 30’ from building and be parallel to exterior walls (ref: 2010 CFC, Appendix D). The purpose is to allow proper/safe use of ground or aerial ladders by firefighters, at proper climbing angles of the ladder. Typical climbing angles are about 60-70 degrees. Typical angles for use of an aerial water stream are 60-80 degrees. An aerial ladder truck ladder starts at about 6’ above the ground. Roads shall be within 150’ driving distance of any portion of an exterior wall. Where possible, on-site roads should encircle the building for fire truck access. On-site parking must be controlled to maintain the on-site access road widths at all times.

- Owner should record a “Yard Agreement” on each parcel to guarantee that the required on-site fire access roads are kept clear of vehicles, trailers, storage and structures. Note: Consultant states that this is a very important issue for properties such as this with many trucks and trailers coming in and out, and perhaps needing to park overnight until unloaded or loaded. It is also important that no temporary modular or trailer offices, etc., are located in fire access roadways.

- There should be a recorded requirement on each lot to maintain all roads and driveways.

- Fire lanes need to be posted "No Parking-Fire Lane" and any curbs painted red. It is recommended by the consultant that the signage be bi-lingual.

- Dead end roads or driveways exceeding 150' shall have Fire District approved turnarounds. Cul-de-sac bulbs should be at least 84' in diameter for fire truck turning.

- All buildings should be separately addressed off the closest public entrance road. Addresses and unit numbers should show on each side of the buildings and be to Fire District approval. Numbers to be 6" high with ½" stroke.

- Geographical directories may be required at entrances to multiple building developments on a parcel.

- Firefighter foot access, 6' wide, all weather, should be provided around all sides of buildings.

- Actual location and size of fire truck access and firefighter foot access to be to approval of Fire District at time of submittal of detailed plans on any parcel. Access doors on exterior, which are locked, shall have hardware that is openable from exterior by a Firefighter with a key.

- Public roads cannot be gated per Fire Code. Any gates on private roads or driveways shall comply with the requirements of the RFPD and the San Diego County Fire Authority Fire Marshal. Gates are required to have KNOX switches, which override all other command functions and open the gate. Switches to be double keyed or switched to also allow Law Enforcement use. They shall also have emergency traffic control-activating strobe light sensors (Opticom) or other devices approved by the Fire Chief, which shall activate gate on approach of fire apparatus, and have a battery backup or manual mechanical disconnect in case of power failure. All gates and their controls are to be to approval of Fire Chief. Gates should not be of vertical opening type.

- The Fire Code requires a minimum of 2500 GPM for commercial developments and developments in the WUI areas. County Fire Code requires 2500 GPM in mains in a high wildland fire hazard area (Code states "for subdivisions"). The RFPD requires the Fire Flow needed for the worst case Fire Sprinkler flow plus hose lines, or that required by Appendix B in the 2010 CFC with a 50% credit for sprinklers, whichever is greater. 2500 GPM is the absolute minimum. Double back flow devices shall be UL listed or FM approved for fire service and shall be OS and Y indicating valves. All valves on such OS and Y's shall be remotely supervised to a 24/7 approved alarm company.

- Any warehouse buildings should be designed for at least .45 gpm/sf over 3,000 s.f. or more if determined necessary by the sprinkler designer, plus hose stream allowances, to assure adequate protection for the tenant occupancies. Actual system design and calculations, and determination of fire flow requirements, and adequacy of the water supply GPM and PSI for all buildings are the responsibility of the sprinkler designer, engineer and architect and are out of the scope of this plan. The building owner/developer will be responsible to assure the design and installation of the sprinkler systems, risers, and water supply, to provide the

required sprinkler system demand plus hose streams, and determine the total needed fireflow based on the contents, commodities, building size and type of construction per Fire District requirements. The developer and system designer need to also assure that the needed fireflow is available. Fire protection system plans relative to tenant improvements and change of occupancies, need to be submitted and approved by the Fire Agencies, prior to any future occupancy or tenant change.

- An FDC with an approved number and size of Fire Department connections should be required at each double backflow point of connection from public to private water system. (Consultant note: The purpose for this connection is so that any private system can be charged by Fire Department from public water supply.) Listed one-way check valves shall be installed in the proper locations. Consultant recommends that all double backflow prevention devices be UL listed or FM approved for fire service and have indicating O. S and Y valves supervised and locked in operating position, and that they be visible from the public street accessing the building.

- Buildings on any lot will need to have fire protection systems designed to operate within the available fireflow and pressure from the public water system, or will require a private water system with stored water and fire pumps. This can also result in a limitation of type or size of occupancy.

- A recorded CC&R document, or other approved legal document which outlines care and maintenance of any private water system, should be provided to the Fire District for approval prior to issuance of the first Building Permit. This document should include the maintenance and compliance of onsite Fire Lanes.

- The water system, whether public or private, must be designed to the standards of the Otay Water District, the Rural Fire Protection District, and AWWA Standard M-31; "Distribution Requirements for Fire Protection" latest edition (currently the third edition). NFPA 24 shall also be followed for a private system. On site water mains should have at least two connections to the water main in the public streets.

- Hydraulic fire protection water system calculations and sprinkler system drawings, calculations and drawings for any on site fire mains (which are to be looped), and a drawing showing locations of hydrants and FDC's, shall be submitted to the Fire District for approval prior to construction on the individual lot. Consultant recommends that the plans for any private water system, and any onsite sprinkler and hydrant system, also be submitted to the Fire District for review and approval prior to construction. This shall include locations of hydrants, FDC's, PIV's, isolation valves, lateral valves, and risers.

- Fire hydrant layout on public roads, and on private lots, shall be approved by the Fire District and shall also comply with 2010 CFC Appendix C. On-site hydrants are required when the distance from a hydrant in the street exceeds 150' driving distance onsite. New on-site hydrants on pads shall be spaced 300' apart on streets and on-site fire lanes. Fire District requires the fire hydrant system to flow at least 2,000 GPM at 20 PSI at a building. Fire hydrants and PIV's should be located at least 40' from buildings or have a 2 hour fire wall at location of hydrant or PIV.

- Hydrants to have two 4" outlet connections and one 2.5" outlet connection per the Fire District, and the Water District standard and as needed for industrial fire operations.

- Lateral valves should be 10-25' from (front of) hydrant.

- Hydrants, sprinkler connections, PIV's, FDC's, and any exterior sprinkler risers located closer than 4' to the face of any curb (consultant note: or close to any areas of truck traffic including backing) must have crash posts at least 6" in diameter, constructed of schedule 40 steel, concrete filled, spaced not more than 4' between posts on center, set not less than 3' deep in an adequate concrete footing of not less than 15" diameter, and set with posts not less than 3' aboveground. Posts to be 3 feet away from the protected object (refer to 2010 CFC Section 312). 6-inch diameter posts are recommended due to heavy truck traffic. Posts must not block operation of fire hydrants or Fire Department Connections.

- Hydrants should have a 3'x 3' concrete pad around base to prevent build up of weeds and vegetation. If hydrants are dry barrel, gravel shall be used instead.

- Blue dot hydrant markers must be installed at each hydrant. Red dot markers must be installed at each FDC.

- There should be a zoned graphic fire alarm annunciator at the main entrance to each building on the address side. Consultant note: Annunciator to monitor and annunciate all sprinkler risers and zones and any smoke detection zones.

- Any required fire pump system requires two redundant listed or approved fire pumps complying with NFPA 20. One of the pumps should be a diesel or approved emergency power shall be provided.
- Any building with high piled stock should have automatic wet standpipes with 1.5 inch thread attached to Fire Sprinkler system, in the high piled stock areas, to assist in firefighting operations. Flow to be at least 100 GPM, and with the ability to boost pressure from the FDC. Fire hose will be provided by the Firefighters.

- In addition, all major buildings to have automatic wet standpipes plumbed off sprinkler system to aid firefighters in firefighting, due to the potential size of the buildings, if the foot travel distance from an exterior entrance door exceeds 150 feet. These connections should be 2.5 inch FD male thread with a reducer to 1.5 inch FD male thread, and a cap with security provisions. Flow and pressure to be to Fire District approval. Actual locations to be shown on fire sprinkler drawings. In concept, they should be on perimeter of the interior, at each entrance door AND located so that all portions of the interior of the building can be reached with 100' of fire hose and a 30' stream. Standpipe installations to comply with NFPA 14, NFPA 13, and Section 905 of the 2010 CFC. Exterior doors leading to nearby locations of wet standpipe outlets should have a Blue reflective marker on the exterior wall next to door, to indicate to Firefighter that there is a wet standpipe located inside door.

- Underground firewater mains should be a looped system and shall comply with Otay Water District requirements and shall be a part of their system. Minimum lateral size to hydrants to be 6" ID. Estimated loop size is 10" to 12" ID subject to detailed design and calcs. Loop shall provide needed fire flow around either direction to most remote location, if a valve is shut off and the most direct path of water flow to most remote location is out of service.

- Standard, RFPD approved, commercial wet barrel fire hydrants with two 4" outlets and one 2.5" outlet are required. They shall comply with the Otay Water District specifications for a commercial/industrial hydrant. Hydrants to be located at each intersection and spaced 300' apart on the public roads (except RFPD allows 600' spacing on a public, perimeter, Road where there is no Fire Truck access to a private lot). On site hydrants to be spaced 300' apart on the on site fire lane roads on lots. Number and distribution of hydrants to also comply with Table C105.1 in the 2010 CFC. Hydrants to be 40' from structures to be protected. Isolation valves on laterals to be 10 to 25 feet in front of hydrant.

- Hydrants shall flow 1,000 GPM at 20 PSI. During a single fire hydrant test. The hydrant main system shall flow at least 2500 GPM at 20 PSI per Fire District. However, the actual required fire flow for a particular building may be higher depending on size of building and type of construction. Post Indicating (PIV) valves, except valves on laterals to hydrants, need to be supervised.

- Hydrants shall be located in an island, behind a curb, or in a protected area not obstructed by parking and out of the way of truck traffic, including backing. 2010 CFC Compliant crash posts should be installed where needed. Blue reflective markers shall be installed in fire lane in front of hydrant. Curbing at fire hydrant to be painted red and marked "No Parking- Fire Lane" in bi-lingual wording.

- Hydrants and FDC's shall be clear for 3' around them and have a concrete base (gravel if dry barrel hydrant) to prevent weeds. There shall be no trees within 10 feet of fire hydrants or FDC's.

- Firewater system valves, any fire pumps and fire protection systems shall be supervised to an offsite approve 24/7 alarm monitoring station.

- Buildings storing high piled stock will have smoke vents, or RFPD approved smoke removal systems or methods, for high piled stock. Smoke vents should have tempered glass, if feasible, and have the capability to be opened manually on roof or from warehouse floor area by firefighters' use of a latch, etc.

- All buildings should be provided with the means for firefighters to remove smoke, such as openable roof vents, or RFPD approved smoke control and removal or exhaust system, to approval of the Fire Chief, with emergency power, regardless of the type of sprinkler head. Section 909 of the CFC, regarding smoke control systems, shall be complied with if Smoke control systems are provided. Smoke and heat vents shall comply with Section 910 of the 2010 CFC. In addition, smoke vents may be required by Section 910 for F-1 and S-1 occupancy buildings over 50,000 square feet of undivided area. Refer to Section 910 of 2010 CFC for details and exceptions.

- The buildings will have the required number of parking spaces. This will help minimize the potential for parking in fire lanes.

- The buildings may have numerous truck wells/docks and overhead doors due to the use.

- Interior partitions between tenant units in buildings should be at least 1-hour fire rated, non-pierced, walls, or may be required to be a higher rating if required by the CBC.

- Note: Certain occupancies could require explosion control or venting per the Fire and Building Code. Refer to 2010 CFC Section 911 and 2010 CBC Section 414.5.1. This may require approved vertical explosion venting or a clear space of 50' in horizontal width on exterior of the building wall, and on the same lot.

- Due to lack of Fire Department staffing and Aerial Ladder Truck, RFPD approved, remotely supervised, zoned, smoke detection systems should be installed in all buildings over 40,000 square feet in order to detect a fire while it is still small, or such buildings should be divided by fire walls every 40,000 square feet. Such a system can be a beam type detection system rather than spot type smoke detection. The actual requirement for this system would be made by the RFPD based upon type of occupancy and the activities therein.

- Buildings to have KNOX data and key boxes at main entrance to buildings, and any entrance doors to sprinkler riser rooms, to Fire District approval. It is recommended by consultant that the data boxes also contain a suitable floor plan, showing location of sprinkler risers, alarm panels, HVAC controls, gas shutoffs, electrical panels, any roof access stairs, and an updated list of the types of commodities stored in the building.

- Buildings should have approved stairways to provide firefighter access to roof due to lack of ladders to reach the roof until a ladder truck is placed in service in East Otay Mesa.

- Any buildings intended for high piled stock shall comply with Chapter 23 of the 2010 California Fire Code, and include firefighter access doors every 100' lineal feet, smoke vents or smoke removal systems per the Fire Code or the RFPD, and shall have wet standpipes. The consultant recommends that smoke vents be openable manually from rooftop and from warehouse floor. High Piled stock buildings should assume storage of high hazard commodities and plastics.

- Any awnings on buildings, such as over the loading docks, should be non-combustible, sprinklered and designed so as to not collapse during a fire.

- Any storage or use of hazardous materials, combustible or flammable liquids, compressed gases, etc., shall comply with District Fire Code. Consultant also recommends that there be no storage of fireworks, explosives, or flammable or hazardous compressed gases. Hazardous materials and flammable or combustible liquids, various gases, etc., must be kept below Maximum Allowable Quantities (MAQ) if these occupancies are not designed as H occupancies. Hazardous materials or flammable liquid storage rooms (H rooms) may be allowed by the Fire District and the Building official, if MAQ quantities are exceeded, after use of control area provisions of the Code. Exterior storage of LPG, LOX, Ammonia, acids, flammable or combustible liquids or gases, and other hazardous materials, should be located away from buildings and property lines, in compliance with the Fire Code, and should have proper built in fire protection and proper labeling. Water spray systems may be required. Chapter 34 and Chapter 27 of the 2010 California Fire Code list the required distances from buildings, property lines and public ways for hazardous materials and flammable and combustible liquids. Chapter 27 and Chapter 30 of the 2010 CFC, regulate compressed gases. LPG is regulated by Chapters 30, 35 and 38. Developers and Architects for specific lots

must check the Fire Code exterior storage and spacing requirements when designing a building and lot.

- Any vehicle wrecking yards must comply with RFPD requirements.

- Any fueling of vehicles on lots must comply with 2010 California Fire Code Section 22.

- Any parking structures to comply with NFPA Standards and the Fire Code including fire sprinklers and wet standpipes.

- Any building storing Hazardous Materials or flammable or combustible liquids shall have the NFPA hazard (diamond) signal displayed on the street side of the building and over the entrance to the storage area. Occupancies with significant hazardous materials risks should provide additional funding, above the basic RFPD funding requirements, for Hazardous Materials equipment, firefighting foam, etc.

- Roofs shall be Class A fire rated roof assemblies, (if available for flat roofs if they are used), installed per their listing and Manufacturer instructions, in compliance with 2010 CBC Chapter 7-A and County Building Code Section 92.1.704A1. and Section 1505. Roof coverings where a profile allows space between covering and roof decking shall have any space, including at ends, constructed and fire stopped to prevent intrusion of flame or burning embers. If Class A roof assemblies are not yet available for flat roofs, then Class B roofs will be acceptable to San Diego County Fire Authority Fire Marshal, upon submittal of a request for Alternative Methods to the Fire District and the San Diego County Fire Authority Fire Marshal (based on a telecon with Ralph Steinhoff, DPLU, on 7-28-06 regarding this issue).

- Roof Valleys: When provided, valley flashings shall be not less than 0.019 inch (#26 galvanized sheet gage) over a 36 inch wide underlayment of one layer of #72 ASTM cap sheet running entire length of valley.

- There should be no light wood on exterior of buildings. Heavy timber is okay. Exterior walls will most likely be tilt up concrete with perhaps some metal. Exterior walls will be of approved non-combustible or Ignition Resistant as required by the County and State Building Code based on size and type of occupancy. 2” nominal solid blocking will be installed between rafters at any roof overhang.

- Any eaves, fascias or soffits, shall be enclosed and protected per County Building Code WUI requirements; Section 92.1.704A.2.3

- Protection for vents on buildings shall comply with County Department of Planning and Land use requirements, and County Building Code, and CBC Chapter 7-A requirements, for Wildland Urban Interface areas. No vents in soffits, rakes, eaves, eave overhangs, cornices, between rafters at eaves, or other similar exterior overhangs. HVAC intakes should also have proper screens. Vents should be designed to prevent intrusion of airborne burning debris from a vegetation fire or other exposure fire. Vents should have louvers and 1/8” mesh screens per Building Code. The architect and building official should investigate use of baffled vents such as Brandguard (www. Brandguardvents.com) or equivalent.

- Any turbine vents shall be designed to rotate in one direction only so as to not suck smoke and burning debris into a building.

- Forklift refueling stations to be outside.

- Battery charging to have proper protection/ventilation/spill control.

- Exterior glazing should be tempered or double pane with one tempered pane, or a fire rating of not less than 20 minutes, to protect from any breakage and intrusion of burning debris during a wind driven off site vegetation fire.

- Trash areas/containers should be on exterior of buildings, and should not be connected to interior of a building. The locations shall be to approval of the Fire District. Trash dumpsters within 25' of a building should be at least 10' from the building and have exterior sprinkler protection or be in a 1 hour rated enclosure. Large exterior dumpsters should have 2.5" diameter Fire Department Connections on them.

- Fire extinguishers shall be provided throughout all buildings, including at each loading dock door (in the event of a truck fire).

- Wet standpipes will be installed where required.

- Paper faced insulation is prohibited in attics and ventilated spaces. (County Fire Code Section 92.1.706A.1)

- Roof gutters to be provided with an approved means to prevent accumulation of leaves and litter in gutter (2010 CBC Chapter 7-A and County Building Code Section 92.1.704A.1.5).

- Exterior doors shall comply with County Building Code Section 92.1.704A.3.2.3 and CBC Chapter 7-A. Doors shall be of approved non combustible construction, or solid core having stiles and rails not less than 1 3/8" thick with interior field panel thickness no less than 1 ¼" thick, or shall have a fire resistance rating of not less than 20 minutes. Exception; non-combustible or exterior fire retardant treated wood vehicle access doors.

- Skylights are required to be tempered glass per County Building Code Sec 92.1.704A.1.6.

- Any decks, exterior balconies, patios and patio covers, unenclosed roofs and floors and similar architectural projections and appendages, are required to be constructed of concrete, approved non-combustible material, approved fire resistant material, or heavy timber, maintain the ignition resistant integrity of the exterior walls, and comply with the County Building Code Wildland Urban Interface requirements, Section 92.1.704A.4 and the 2010 CBC; Chapter 7-A. This appears to include loading docks and canopies. Any awnings, umbrellas, or covers should be fire retardant or non-combustible. Undersides of appendages and floor projections shall also comply with this section and maintain the ignition resistant integrity of exterior walls. This would appear to include loading docks.

- Sprinkler head deflectors and lighting fixtures shall be so located to assure a 3' clearance from storage, or more if necessary.

- No wood fencing within 5' of a building. Wooden gates are allowed if there is 5' of approved, non-combustible fencing installed adjacent to gate as a fire break.

- Tenant Improvements/Fire Permits: Plans for tenant improvements shall be submitted to the Rural Fire Protection District and the County Department of Planning and Land Use for review and approval prior to occupancy of any original or subsequent tenant. Plans shall include Fire sprinkler plans and calcs, and shall also address all applicable Fire Code requirements and High Piled Stock permit submittal requirements as found in 2010 California Fire Code Chapter 23. Any Fire Permits required by Section 105 of the California Fire Code, shall also be applied for.

- Redundant methods to call 911 should be provided, such as hard line phones and cellular phones.

- Emergency plans: Each tenant should have a bi-lingual Emergency Plan which includes steps for employees to take in an emergency, and makes it clear who is assigned to call 911. Manual fire alarm systems will be provided as needed to alert employees. It is preferred that 911 calls are made by landline rather than cell phone so that the Public Safety Answering point (PSAP) can identify the location of the emergency. 911 calls via cell phone go to the Highway Patrol and the ability to identify the site of emergency is less specific.

- On-site fire lanes shall be identified and posted in a manner acceptable to the Fire District to prevent parking therein. Any truck parking on the streets needs to be controlled so that a minimum 24' wide unobstructed fire lane is maintained.

- All buildings are required to have approved addresses visible and readable from the street. Characters to be 12" high with 1" stroke.

7.2.5 Noise

- The proposed Project shall comply with the County Noise Ordinance (County Code of Regulatory Ordinances, Title 3, Division 6, Chapter 4), which prohibits construction activities between 7PM and 7AM, Monday through Saturday, excluding legal holidays.

- Mass grading of the proposed Project site shall occur as part of the first phase of the proposed Project.

- The sewer pump station proposed off-site (immediately easterly of Lot 24) shall consist of two (2) underground 40 horsepower pumps encased in a concrete vault. An alternative configuration for the pump stations may be proposed, provided it can be demonstrated that noise levels associated with the pump station would not exceed the 75 dBA exterior noise limit specified in Section 6310(d) of the San Diego County Zoning Ordinance.

7.2.6 Public Services

- The Project shall be conditioned as follows:

  a. Permanent Sheriff Substation. Either alone or in conjunction with other developers similarly conditioned,

1) Acquire and dedicate to the County of San Diego, or obtain an irrevocable commitment for conveyance to the County, at no cost to the County, a parcel of land suitable in size, location and configuration for a Sheriff's Substation to satisfaction of the County of San Diego Sheriff's Department.

2) At such time as the Sheriff's Department determines that the Permanent Sheriff Substation is needed, obtain all required discretionary and ministerial permits (e.g., Major Use Permit, grading permits, building permits, etc.) for and construct or provide a permanent building of approximately 6,000 square feet and associated improvements determined to be necessary and adequate by the County of San Diego Sheriff's Department for a "turn key" Sheriff's Substation facility. The associated improvements include, but are not limited to, building and building fixtures, tenant improvements suitable for a Sheriff substation, signage, office furniture, security systems, parking, landscaping, lighting, fencing, and all utility and service connections. The associated improvements shall not include office equipment such as computers, printers, telephones, or radio equipment. Program requirements for the substation facility shall be provided by the County. Developer shall obtain County's approval of the design and specifications prior to construction of the substation facility. Approval of discretionary permits for the Permanent Sheriff Substation will require appropriate review under the California Environmental Quality Act (CEQA). Appropriate land use findings as set forth in the County Zoning Code also will be required in association with discretionary permit(s).

b. Financing Mechanism. Create and participate in a financing mechanism (e.g., a community facilities district) determined to be sufficient by the County of San Diego to fund the construction of the permanent Sheriff's Substation, including, but not limited to, the land acquisition costs, development costs, and costs of formation of the facilities district.

7.2.7 Transportation/Traffic

- The roadway segment of Airway Road from Airway Place to Alta Road shall be improved to its ultimate half-width section as a Major Roadway prior to the recordation of the Final Map for Unit 1.

- The roadway segment of Siempre Viva Road between the existing CHP Facility (esat of Enrico Fermi Drive) and Airway Place shall be improved to provide one (1) additional eastbound travel lane with appropriate transitions such that the improved facility can accommodate one (1) travel lane in each direction prior to the recordation of the Final Map for Unit 1.

- The roadway segment of Siempre Viva Road between Airway Place and Hawano Drive North shall be graded to its ultimate full-width section (98-foot ROW) and shall be improved to its ultimate half-width section as a Major Roadway (i.e., one lane in each direction) prior to the recordation of the Final Map for Unit 1.

- The roadway segment of Siempre Viva Road between Airway Place and Hawano Drive North shall be improved to the standard equivalent to a Town Collector (one travel lane in each direction and a center two-way left turn lane), and shall dedicate and provide security

for full width improvements to this segment as a Major Roadway, prior to recordation of the Final Map for Unit 2.

- The roadway segment of Siempre Viva Road between Hawano Drive North and Alta Road shall be graded to its full-width section (98-foot ROW) and improved to its ultimate half-width section as a Major Roadway (i.e., one lane in each direction) prior to the recordation of the Final Map for Unit 1.

- The applicant shall dedicate and provide security for the full width improvements to the segment of Siempre Viva Road between Hawano Drive North and Alta Road as a Major Roadway (98-foot ROW) prior to the recordation of the Final Map for Unit 2.

- The roadway segment of Via de la Amistad between the western Project boundary and Alta Road shall be improved to its ultimate standard as a 2-Lane Industrial/Commercial Collector, and shall construct a cul-de-sac along the western terminus, prior to the recordation of the Final Map for Unit 2.

- The roadway segment of Airway Place between Airway Road and Siempre Viva Road shall be improved to its ultimate standard as a Non-Circulation Element 2-Lane Industrial/Commercial Collector prior to the recordation of the Final Map for Unit 1.

- The roadway segment of Hawano Drive North located north of Siempre Viva Road shall be improved to the standard of a Non-Circulation Element 2-Lane Industrial/Commercial Collector prior to the recordation of the Final Map for Unit 1.

- The roadway segment of Hawano Drive South located north of Via de la Amistad shall be improved to the standard of a Non-Circulation Element 2-Lane Industrial/Commercial Collector prior to the recordation of the Final Map for Unit 2.

- The roadway segment of Alta Road between Airway Road and Siempre Viva shall be improved to its ultimate half-width section as a Major Roadway (i.e., one lane in each direction) prior to the recordation of the Final Map for Unit 1.

- The roadway segment of Alta Road between Siempre Viva Road and Via de la Amistad shall be improved to the standard of a 2-Lane Industrial/Commercial Collector, with exception of streetscape improvements along the eastern edge of the roadway, prior to the recordation of a Final Map for Unit 2.

- The roadway segment of Alta Road located southerly of Via de la Amistad shall be improved to the standard of a 2-Lane Industrial/Commercial Cul-De-Sac, with exception of streetscape improvements along the eastern edge of the roadway, prior to the recordation of a Final Map for Unit 2.

- Prior to the recordation of the Final Map for each phase of the proposed development, on-site intersections shall be improved with appropriate traffic control measures as recommended in the Project's traffic impact study (SEIR Appendix G).

- As part of the improvements to Airway Road between Airway Place and Alta Road, Siempre Viva Road between the CHP Facility (east of Enrico Fermi Drive) and Airway Place, and

Alta Road between Airway Road and Siempre Viva Road, appropriate signage and striping shall be provided for bicycle lanes in a manner consistent with the County of San Diego Public Road Standards in effect at the time of application for such improvements. The configuration and amount of signage shall be subject to review and approval by the County DPW.

- The proposed Hawano Drive North cul-de-sac shall provide a 310-foot long left-turn pocket along the eastbound direction of Siempre Viva Road and place a 50-foot long no-parking/red curb restriction at the northwest corner of the Siempre Viva Road/Hawano Drive North intersection in order to accommodate the truck turning movements.

- The Siempre Viva Road/Hawano Drive North intersection shall be signalized.

- The proposed Project's driveways along Alta Road shall be designed to have a minimum possible separation of 300 feet or more between other driveways or intersections. Adequate sight distance, in both directions, shall be provided at each driveway pursuant to the prevailing speeds along Alta Road, Hawano Drive North, and Hawano Drive South to the satisfaction of the Director of Public Works.

- Based on previous supported design exception requests for East Otay Mesa development, DPW will allow centerlines separation of a minimum 100-foot between driveways accessing Industrial/Commercial Cul-de-Sac Roads. Adequate sight distance in both directions shall be provided at each driveway pursuant to the prevailing speeds along Hawano Drive North and Hawano Drive South, including driveways entering the cul-de-sacs, to the satisfaction of the Director of Public Works.

7.2.8 Utilities and Service Systems

- The proposed off-site sewer pump station (located immediately to the east of Lot 24) shall, to the satisfaction of the Department of Public Works, be constructed using materials that are resistant to corrosion. Final design criteria and specifications for all sewage facilities will be subject to review and approval by the Director of Public Works and the regulatory agencies

- In the event that a CFD or similar mechanism is not in place at project approval, the Project would be conditioned as follows:

  SEWER SERVICES: [DPLU, REG] [DPW, WW] [BP, GP, IP, UO] [DPLU, FEE]. The developer shall assure the availability of sewer services to serve the proposed development by means of one of the following methods:

  In the event the project precedes establishment of a Community Facilities District (CFD).

  Prior to the recordation of a Final Map / Parcel Map, the developer shall execute a covenant, to be provided by the City of San Diego, to participate in, and not object to, the formation of a Community Facilities District or other mechanism, to fund or reimburse the construction of the improvement phases, as identified in the Otay Mesa Trunk Sewer Infrastructure Upgrades Cost Estimate and Constructability Review (Brown and Caldwell) dated June 9, 2009. The developer shall secure performance of this obligation by recording the covenant with the County Recorder with a copy to the City.

In the event that a CFD is already established:

Prior to the recordation of a Final Map / Parcel Map, the developer shall annex into the Community Facilities District to fund or reimburse the construction of the improvement phases, as identified in the Otay Mesa Trunk Sewer Infrastructure Upgrades Cost Estimate and Constructability Review (Brown and Caldwell) dated June 9, 2009. The developer shall secure performance of this obligation by recording the annexation with the County Recorder with a copy to the City of San Diego.